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AN INTRODUCTION

TO

GREEK AND LATIN ETYMOLOGY.

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AN INTRODUCTION

TO

GREEK AND LATIN ETYMOLOGY.

BY

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FORMERLY TEACHER OF SANSKRIT IN THE UNIVERSITY
OF CAMBRIDGE.

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PREFACE.

THIS edition differs from the first principally by the attempt which I have made to give a more complete explanation on physiological grounds of the phonetic changes in Greek and Latin. I have tried to describe, with more or less fullness, all the sounds which are now heard in Europe, with the exception of those of certain races, as the Sclavonic, Keltic, and others, which seemed too remote from my subject; because I wished, first, to provide a list of sounds which, in all probability, contain all those of the old Greek and Italian; and, secondly, to give an account of the mechanism of speech which, though short and necessarily incomplete, should yet be sufficient to supply the reader with the means of estimating the character of the changes submitted to him in particular languages. It is only when we have some clear understanding of the action of the different organs employed in speech that we can realise the nature of such changes as labialism, palatisation, the different corruptions of the dentals, the changes of *s* into *sh*, *r*, *th*, and the like—changes which are historically certain, but of which the historians of language often give very unsatisfactory, because unmethodical, explanations (as Corssen), or leave them altogether unexplained, as Curtius generally does. In this matter I have got most help from Prof. Lepsius's *Standard Alphabet* and Prof. Whitney's criticisms of the same in the *Journal of the American Oriental Society;* from Mr Alex. J. Ellis's *Early English Pronunciation*, a work which, though its object is special, contains most valuable suggestions on the general history of language; but chiefly from the *Principles of Speech* and *Visible Speech* of Mr A. Melville Bell, who has given a full, and, so far as I can judge, a most accurate analysis of the different sounds, especially of the English, but with incidental reference to those of many other languages: the diagrams which accompany his later work will be found extremely useful to illustrate the description of the sounds which I have given in Chapter IV.; the most important of them may be had separately in a little work called *English Visible Speech for the Million*, at the cost of one shilling. Lastly, on this, as on many other points, I have profited much by the sound judgment and originality of view shewn throughout Mr Roby's most excellent *Latin Grammar.* I have already, in the first edition of this work, acknowledged my obligations to Pott, Benfey, Curtius, Corssen, Schleicher, Leo Meyer, and the *Zeitschrift*[1].

I have slightly modified the arrangement of the book. I have abandoned the lecture-form, but I have not attempted to do away altogether with the lecture-character, thinking it best adapted to my purpose. I still wish it to serve principally as an Introduction to the great works of Curtius and Corssen. I have, therefore, been at pains to develope principles and to suggest questions which could not be fully solved within my limits, and must receive their answer elsewhere. I did not wish to make a mere handbook of linguistic facts; a better could not be made than Schleicher's. Since, however, my book has been recommended by the Cambridge Board of Classical Studies, as one of the books of reference for the Tripos Examination, I have thought it better to bring the slight disquisitions on the nature of roots, &c., which were formerly scattered, into one chapter—the Third. I have rewritten many passages which were either obscure or incomplete: on one point—the nature of Assimilation—I have considerably modified the account formerly given. I have added new examples in some places; but I have never attempted to give all that could be given, for the plain reason that the student should be left to find them for himself. I wish to stimulate, not to satisfy enquiry. I am afraid that the changes I have made may have led occasionally to some repetition, and perhaps to some inconsistencies; if so, I must plead in excuse that I have been obliged both to write and to print, at considerable intervals, as I could get time from pressing work.

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[1] Reference is made in this edition to the third edition of Curtius's *Griechische Etymologie*, and to the second edition of Corssen's *Aussprache*, &c., except in one or two places, where the contrary is stated.

I have received valuable suggestions from several reviewers of the first edition; more especially from Prof. Whitney, in the *Journal* already referred to; from Prof. Joseph B. Mayor, in the *Cambridge Journal of Philology*; and from Dr Wagner, in the *Academy*. Some of the arguments of the first two writers are referred to in special notes. Prof. Mayor's dissent from my general principle arises mainly, I venture to think, from a misapprehension of it, for which I am responsible[1]. The idea that man was actuated in speaking only by laziness had certainly not crossed my mind till I found it attributed to me by Prof. Mayor. I hope that I have now made this clear in my first chapter. Since, however, he does not seem to believe that even the desire for ease of articulation is the principal cause of change in language, and as he imagines that this view is peculiar to myself, I may quote here a passage from Corssen, in which, by an odd coincidence, he is mentioning the assent of different philologists to this very doctrine; the passage is new, in the second edition of his book (1870). He says: "Je mehr die Jugendfrische der sinnlichen Wahrnehmung eines Volkes abnimmt und die Macht der Gedankenbildung in Volksgeiste vorherrschend wird, desto mehr neigt es dahin mit der möglichst geringen leiblichen Anstrengung der Lungen und Sprachwerkzeuge den Zweck der lautlichen Bezeichnung jenes Gedankengehaltes durch seine Sprache zu erreichen. Schleicher sagt (*die Deutsche Sprache, s.* 49), 'Alle Veränderung der Laute, die im Verlaufe des sprachlichen Leben's eintritt, ist zunächst und unmittelbar Folge das Strebens unseren Sprachorganen die Sache leicht zu machen; Bequemlichkeit der Aussprache, Ersparung an Muskelthätigkeit, ist das hier wirkende Agens.' Curtius findet in der Regelmässigen Vertretung der Laute wie in den vereinzelten Abweichungen derselben 'eine einzige Grundrichtung, die der Verwitterung, welche, schärfer gefasst, in der schlafferen Articulation gewisser Laute bestand' (*Gr. Et. s.* 66 *f.*)...In Uebereinstimmung mit ihnen sagt auch F. Baudry, *Grammaire Comparée*, I. 85: 'En résumé, comme il arrive pour tout acte humain, le langage livré à lui-même tend à s'exercer avec la moindre action, ou, ce qui revient au même, avec l'action la plus commode possible.'"

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[1] See especially note to page 8.

Lastly, I have to thank the Rev. W. W. Skeat, the well-known editor of the *Vision of Piers the Plowman*, for many valuable suggestions, principally in English etymology; and H. Bendall, B.A., of Christ's College, for the very complete indices which accompany this edition.

JOHN PEILE.

TRUMPINGTON,
Dec. 21, 1871.

EXPLANATION OF SYMBOLS.

In Sanskrit words *ch* and *j* denote nearly the same sounds as in English.
.... *ç* denotes the palatal sibilant.
.... *ṅ* .... nasal.
.... *m̃* .... *anusvâra* or after-sound.
.... *ṭ*, *ḍ*, *ṇ*, *ṣ* denote the cerebral letters.
In Lithuanian words *ů* denotes *o* followed by a slight *a*-sound.
.... *ą*, &c. denote vowels followed by a suppressed nasal.
.... *sz*, *š* Sclavonic } denote *sh*.
.... *ž* denotes weak (French) *j*, =*zh* (page 70).

Roots are denoted by the symbol √ and Indo-European roots are printed in capital letters; so √AD = Lat. √*ed* = Gr. √*εδ*.

All vowels should be pronounced as in Italian, subject to the modifications in Chapter IV. The English sounds are denoted by the symbols (not italicised) in brackets: thus (ee) denotes the English equivalent of the vowel *i*.

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   - (ii) Medial vowels, 408. The "connecting vowel," 409. Auxiliary vowels in Latin, 410.

7. Auxiliary (inorganic) consonants, 411.

Conclusion, 412.

ERRATA.

Page	4,	line	16,	*for*	*τίθεις*	*read*	*τιθείς*
...	19,	...	2,	...	'Αχίλλευς	...	'Αχιλλεύς
...	43,	...	20,	...	Sanskrit HA	...	Sanskrit √*ha*
...	48,	...	19,	...	*to*	...	*tar*
...	62,	...	16,	...	short	...	shut
...	68,	...	18,	...	*rage*	...	Ta*g*e
...	79,	...	27,	*dele*	in "pellegrino" *for* peregrino, or		
...	125,	...	28,	*for*	Sk. *DHĀ*	*read*	Sk. *dhā*
...	132,	...	28,	...	*φρόντις*	...	*φροντίς*
...	140,	...	19,	...	*ES*	...	√*es*
...	145,	...	20,	...	*αὐτμήν*	...	*ἀυτμήν*
...	167,	...	5,	...	ΤΑΛ	...	√*ταλ*
...	*ib.*	...	6,	...	which	...	with
...	*ib.*	...	7,	...	ΤΑΡ	...	√*ταρ*
...	188,	...	18,	...	base ΕΔ	...	√*εδ*
...	190,	...	15,	...	*εἴκτον*	...	*ἐίκτον*
...	191,	...	8,	...	*Ϝοίκος*	...	*Ϝοῖκος*
...	194,	...	16,	...	*λευκος*	...	*λευκός*
...	195,	...	28,	...	*θῦμός*	...	*θῡμός*
...	*ib.*	...	29,	...	*rūpes*	...	*rūfus*
...	222,	...	14,	...	(a)	...	(ee)
...	224,	...	4,	...	*δΐδα*	...	*δϊδα*
...	226,	*note*	4,	...	last page	...	last page but one
...	228,	*line*	4,	...	*και*	...	*καί*
...	326,	...	28,	...	*ἀύηρ, ἀύως*	...	*αὔηρ, αὔως*
...	327,	...	6,	...	*ἴστορ*	...	*ἴστωρ*
...	*ib.*	...	25,	...	*vri*	...	*vṛi*
...	329,	...	21,	...	*ἰών*	...	*ἰών*
...	391,	...	9,	...	*τέταρες*	...	*τέτορες*
...	397,	...	14,	...	*γραβδην*	...	*γράβδην*

INTRODUCTION TO GREEK AND LATIN ETYMOLOGY.

CHAPTER I.

THE PRINCIPLE OF PHONETIC CHANGE.

Nature of phonetic change.

THE chief subject of this book will be the Laws of Phonetic Change in Greek and Latin. As the term may probably require explanation, I will illustrate my meaning by an example.

In the word δίδωμι we have three syllables. Beginning with the last syllable μι, we have a combination of sound, which a little comparison with other words in Greek or other languages (Sanskrit and Lithuanian) will convince us, denotes the pronoun of the first person "I." This comparison will shew us that the syllable is sometimes reduced to the mere consonant *m*; thus we have in Latin *sum, inquam*[1]; and if we observe that the 1st person singular of the imperfect in Latin (e.g. *fereba-m*) compared with the same person in Greek (ἔφερον) always shews an *m* in the one language by an ν in the other, we shall conclude that for some reason or other the Greeks could change this older *m* into a later ν. But further, by comparison, we shall see reason to believe that this μι of the Greeks is not the oldest form of the syllable; that as it sank into *m* or *n*, so it had previously descended from an older form *ma:* I say "descended," for it is clear to any one who attempts the sounds, that *a*, pronounced as in "father," is a fuller and stronger sound than *i*. One piece of this evidence is the termination of the 1st person plural, which is μες in (Doric) Greek, *mus* in Latin, but *mas* in Sanskrit (a form which a probable analysis explains as *ma* + *sa* or *I* + *he*, i.e. *we; tas* is *ta* + *sa* or *thou* + *he* = *ye*); and as we shall find that in Greek ε often comes from *a*, and in Latin *u* from *a*, but not *vice versâ*, we shall infer (from this and other indications which I have not time to dwell upon more) that this μι is traceable to an older and stronger form *ma*. But—and this is the point I want you to observe—it is clear that the change of sound was not intended to imply any change of meaning; *ma* meant *I*, and the meaning was kept by the most corrupted form of the syllable; not of course that the Greek who said ἔφερον was *conscious* every time that the ν had originally been the personal pronoun; the pronoun had sunk with the lapse of time into a mere grammatical suffix; but ἔφερον still signified "I carried," and conveyed the same idea to the hearer of that day, as when the words "there-carry-I" established their claim to be selected out of many others which would have done as well, or nearly as well, to express the action of carrying in past time. Here then, I repeat, the new sound was not meant to convey a new meaning.

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[1] Also our own "am" (as-mi). In the old Northumbrian gloss of the Latin Gospels we find "ic beom" (I am), Mark ix. 19; "ic geseom" (I see), Mark viii. 24, &c. See the Anglo-Saxon version of the Gospel of St Mark, ed. Skeat p. xxxi. The old High German *pim* or *bim* has become *bin* in modern German, like ἔφερον.

Let us now take the second syllable δω. Here we have long *o*. But we have δό-σις, δότηρ, even δί-δο-μεν in the first person plural; and if we look at similar verbs ἵστημι, τίθημι, we shall see the same long vowel only in the singular of the present. We shall conclude therefore that for some reason this vowel became lengthened in these three persons from a simpler form δο, which conveys the simple idea of giving. Here we shall at present be in some doubt whether any change of meaning was thereby expressed. Let us pass to the first syllable where we shall find the explanation more easily. First of all a comparison with the Sk. *dadāmi* will shew us that the Greek *δι* is not the oldest form of the syllable, but that (just as in the last syllable) *da* has been weakened to *δι*. But why this first syllable at all? Why could not the Hindus and Greeks have said *dami* or *δομι* to express "I give," just as the Sclavonians said *damĭ*, the Lithuanians *dů-mi*, and the Latins *do* (for *da-o*)? One thing is quite clear, *dada* cannot be a weakened form of *da*: it requires much more labour to pronounce; and this labour could not have been taken except for an object. We are of necessity forced upon the conclusion that a change of meaning was intended by the doubled sound. The result to which our analysis leads us is that in the word *δίδωμι* are exemplified the results of two radically different principles of change; the one by which a change of meaning is intended to be expressed; the other by which no such change of meaning is intended. Both changes are seen in the first syllable *δι*, the last only in the last syllable *μι*. The first class of changes I call *dynamic;* the second I call *phonetic.*

Its cause.

What is the motive for this latter change? The reason seems to have been twofold, though each caused the same result. We saw above that the operation of this law of change was to *weaken* the older form; that is, to change it to something which required less effort to produce.

And the general cause of this change can have been nothing else but the striving for ease in articulation; the endeavour to facilitate utterance by substituting a simpler instead of a more difficult sound or sounds; the natural desire to reduce the word to such a form as may express the idea with the least possible amount of labour consistent with clearness. This limitation is important. If a word be reduced too far, its identity is destroyed: two different words expressing different ideas may come to have the same form, and thus clearness is sacrificed. In order to avoid such confusion, a practical limitation is found in most languages; a sound once corrupted is not corrupted again[1]. It is felt that ease of articulation may be purchased too dearly by the loss of the distinctive features of a word: and thus a striving for distinctness of form is called into existence by the very operation of the general law of change. But there are few results of this striving which need to be taken separately into account; because it almost invariably operates in simply stemming the action of that law[2]. Sometimes indeed, but very rarely, the necessity for the distinct expression of what was in danger of becoming confused leads to actual change in a direction contrary to the common one; as for example in the change of the mediae into the tenues in Teutonic: and familiar instances of this retrograde tendency are the lengthening of the original vowel, e.g. in *τίθεις* for *τιθεντς*, or in *λέγω* for *λεγο-μι*, commonly called "compensation." In such words there has been a loss of consonants, and a syllable is felt to be too much weakened, therefore the vowel is strengthened to make up for the loss. Sometimes a vowel in one syllable appears to be lengthened to compensate for the shortening of another syllable[3]: here again we have a conscious attempt to maintain the fullness of the original word, an attempt which does not merely prevent change, but actually introduces it. The changes of Grimm's Law are really examples of this compensation on a large scale.

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[1] This usage is hardly regular enough to deserve the name of a law, but it deserves notice. Instances, both where it is observed and where it is not, will appear in the Latin vowel-change.

[2] I am happy to find myself in substantial agreement on this point with Mr Roby. He writes (*Grammar*, p. 11), "Involuntary phonetic change is the result of a struggle between the physical tendency to reduce the effort of articulation, and the intellectual or instinctive desire of preserving any parts of a word which are characteristic of its meaning. The latter acts mainly by way of resistance, e.g. *ab* is much seldomer changed in composition than *sub*, because of the danger of confusion with *ad*. In the passive voice forms like *amabaris, amaberis, amareris* are shortened into *amabare*, &c., but *amaris* is not shortened into *amare* lest it should be confused with the pres. infin." By "involuntary phonetic change," Mr Roby denotes that change which I call simply "phonetic:" his "voluntary phonetic" is my "dynamic."

[3] As in *λεώς* by *λαός*, *'Ατρείδεω* by *'Ατρείδαο*,—though here indeed another explanation is possible. In √*σκεπ* from Ind.-Eur. SPAK (Lat. √*spec*, Sanskrit √*paç*), we seem to have consonantal compensation. In *χιτών* and *κιθών*, we may have only Dissimilation (i.e. regular phonetic change), and in *τάφος* by *τέθηπα*.

Results of this law of change.

This principle is put very well by Prof. Whitney[1]; "all articulate sounds," he says, "are produced by effort, by expenditure of muscular energy in the throat, lungs, and mouth. This effort, like every other that man makes, he has an instinctive disposition to seek relief from, to avoid: we may call it laziness, or we may call it economy: it is in fact either the one or the other according to the circumstances of each particular case: it is laziness when it gives up more than it gains: it is economy when it gains more than it abandons." Let us take examples of such loss or gain. The Indo-European form of the first person singular of the imperfect of BHAR, to bear, was *abharami* (Sk. *abharam*). Here the Greeks, as well as the Hindus, found the four-syllabled word too cumbrous for use: the accent probably fell upon the augment, because by the augment was expressed the fact that the bearing was in the past time, and the syllable which expressed this modification of the simple idea required emphasis: in consequence then of this emphasis upon the first syllable, the *i* of the last became less and less distinctly heard, until it disappeared altogether, and *abharami* appears as *abhara-m* in Sanskrit, as ἔφερον in Greek: where ν represents *m* by a phonetic law of the language, because the Greeks found ν an easier sound than *m* at the end of a word. But the third person plural of the same tense was in the Indo-European *abharanti:* and this on the same principle was weakened in Sanskrit to *abharan,* in Greek to ἔφερον. We see then, as the result, that whilst each language gained a lighter form by each change, the Sanskrit retained distinct forms, which the Greek did not: the difference between the first person singular and the third person plural had to be expressed in some other way than by the grammatical forms: lightness was gained, but distinctness was sacrificed. In this case we must believe that the gain of lightness of pronunciation was felt to compensate for the loss of grammatical accuracy; for where confusion was felt to arise, new distinctions were made, sometimes new forms arose; for example, the periphrastic tenses, formed by auxiliary verbs, a practice almost universal in modern languages, but found also in the Sanskrit and the Greek. As Prof. Curtius puts it: "the phonetic laws of some one tongue cause a certain form to perish; but forthwith there springs up a new one to supply its place. The original wealth melts away, yet the creative power of language continues to produce new treasures. Differences arise from primary unity: and variations of form thus newly brought forth are employed to distinguish shades of signification[1]." These various forms were turned to better account by the Greek than by any other language. We have given an example where phonetic change produced confusion in the Greek: let us now take one where the variety, resulting from the same principle, was employed with admirable success in differentiation of meaning. Thus the gen. sing. and the nom. and acc. plural of *pad*, a foot, were all formed in Indo-European by the affix *-as*—*padas*. This is almost certain from the fact that the Sanskrit never possessed any different forms for the three cases: and if the requisite vowel-variety had existed in Indo-European, it is exceedingly improbable that the Sanskrit should have suffered it to die out without leaving any trace behind. But if we turn to the Greek we find a very different state of things. In Greek, as in most of the European members of the family, the vowel *a* of the original speech was split up into the three sounds, *a*, *e*, and *o*. This important change will be fully considered hereafter. At present I only wish to say that it seems to have been in its origin purely phonetic: there is no reason to suppose that any change of meaning was intended to be expressed by this change of sound. But these sounds, found ready to hand, were employed by the Greek with marvellous skill. Thus, in our present example, the original *padas* could be differentiated into *ποδός* for the gen. sing., *πόδες* for the nom. plur., and *πόδας* for the acc. plur. No confusion between the different cases was any longer possible. The weakening of *a* into *a*, *e*, *o*, was turned in this instance by the Greek into clear gain; as in many others which will be given in their place. At present I turn back from the results of phonetic change, to repeat its cause—the desire for ease or saving of sound; and its general effect—to substitute a *weaker* for a *stronger* sound. This is not always so, for reasons which I shall shortly point out; but the new sound will always be an *easier* one for the speaker to pronounce under the circumstances in which it occurs. I say, for the speaker: because there are few sounds of which it can be said that they are *absolutely* easier or more difficult than others. Every one knows what contradictory variations may be met with among his own acquaintance: one will pronounce *r* as *l*, another (though very much more rarely) *l* as *r*. Similar differences occur on a large scale in different nations; the Englishman avoids in divers ways the German *ch*: the German finds great difficulty in our *th*. But as with the individual, so is it with the nation. It is the desire to avoid a sound difficult *to him*, which makes a man pronounce *r* as *l*. And I do not know any other reason which can be given for the loss by a whole nation of some sound which was certainly uttered by their forefathers.

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[1] *Lectures on the Study of Language,* p. 69.

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[1] *Essay on the Results of Comparative Philology in reference to Classical Scholarship*, p. 31.

Peculiar causes of different changes in different languages.

It may perhaps be asked what special causes determined the different operation of this principle in different languages. This question—which amounts to an enquiry into the causes of diversity of language itself—cannot of course be fully answered here. No people has preserved unchanged all the letters of the original alphabet. Different peoples have modified it in different ways from causes at which we can give probable guesses, but which we can never certainly know. Occasionally we may see in the altered alphabet something which seems to correspond to the genius of the people which spoke it, or to be due to the country, climate and general circumstances among which they were placed. Thus we may think that we can see in the flexibility of the Greek language the impress of the versatility of the Greek genius, and the effect of that λαμπρότατος αἰθήρ amid which at least the most brilliant section of the Greek family lived: whilst the effect of the hot enervating climate of India may be seen in the numerous weakened forms of the consonants in Sanskrit. Thus lacking energy to bring the root of the tongue firmly against the back of the palate, the Hindus produced in some cases instead of the original *k* a peculiar sibilant (denoted variously in philological works by *s′* or *ç*). In like manner, probably through the influence of an adjoining *s*, they weakened *k* into *ch*, and *g* into *j*, the sound of *ch* and *j* being much the same as in England. Such weakenings are especially common in Sanskrit: and that they are due to some extent to the climate of India would probably be denied by few. Within the same language we may see variations arising from difference of occupation or circumstances. The different ways in which men have to exercise their voices will affect certain classes of sounds: and these differences, if found among a considerable body of people within the same area, have a great tendency to be perpetuated[1].

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[1] Prof. Jos. B. Mayor in a review of the first edition of this work (*Camb. Journal of Philology*, No. 6) holds that the causes of difference of articulation may be roughly classified as "mental, physical, and circumstantial." By the first he means "excitability, vehemence, nervousness, preciseness, artistic sensibility, the analogical disposition always seeking after resemblances, and its opposite which we may call the analytical disposition, always seeking after differences" (p. 332). I certainly should not deny that all these causes have weight; but they are personal, not peculiar to any large body of people living together: therefore they have little tendency to perpetuate themselves, and affect language: they die out with the individual. A quick excitable person may drop half his syllables, a man of "artistic sensibility" may have some

It is not indeed always easy to say where the effect of climate may be traced. In England we see much the same weakenings as in Sanskrit. In different parts of the island we find the hard *k* sound of the Roman *castrum* either retained, or weakened to *ch* or soft *c*: we have Caistor and Lancaster, but Manchester and Dorchester, and weakest of all Leicester and Gloucester. But these varieties are perhaps less likely to be due to the effects of climate in Britain, than to the mixture of different tribes, each of which had its own phonetic laws before it left its original abode[1]. Still (to return to our point) these last forms are the result of a weaker articulation; they are corruptions of the harder sound; it is not a strengthened form of one of them. Similar corruptions in English are our pronunciation of Ocean as *Oshan*, and Nature as *Nachure*, and a thousand other instances which will at once occur to every one. If the spelling in England were not in the main fixed by the standard of the literary dialect, these words would long ago have been written as they are pronounced. In countries where there is no literary dialect, or where there are several, but no one distinctly predominant, variation of spelling is the inevitable result. When writing, and still more when printing has become uni-

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appropriate method of pronunciation: but in neither case is the peculiarity caught by a man's companions or commonly inherited by his descendants. The more intellectual causes referred to by Prof. Mayor, act, I think, principally on mixed languages: they will be noticed at the end of this chapter. Under the second class—physical causes—are given "dullness of hearing and defectiveness in the organs of speech." With this, I quite agree, and also with the third class, in which are mentioned the effect of cold, living in the open air as a labourer, a hunter, or a sailor, &c. Under all these circumstances modifications of speech will take place: they are all particular instances of my general principle.

Prof. Mayor objects strongly to what he calls the libel that "man as a speaking animal is actuated only by laziness." I never said or thought he was. The term "laziness" hardly occurred half-a-dozen times in the book; but I fully allow that some of those passages were calculated to mislead, and I have altered them. I constantly spoke of the desire for an *easier* sound. But a man is not necessarily lazy because he goes by an easier road instead of a hard one, or because he takes a short cut.

[1] We find "ceaster" in A.-S. to which the *ch* is often attributed. But this is not always the case. Thus our "calf" is A.-S. "cealf," "cold" is "ceald." Mr Skeat thinks that the softening to *ch* may be due to Norman influence.

versal, the progress of phonetic change is considerably checked; but how much still goes on will be evident to any one who will consider the difference between the English of Chaucer and that of the present generation[1].

Application of this principle.

Now what is the importance of the principle of phonetic change which I have stated? Its importance is this—it is our best guide in etymology. We learn from it that we must hold it a rule, never to derive a harder from an easier sound; that a word which has retained a strong letter can only under exceptional circumstances be derived from another word which has a corresponding weaker letter. I have said above that few sounds are universally easier than others. There is no standard to fix the relative strength of all sounds available for all languages. Still there are some general rules which can be obtained by two kinds of evidence, physiological and historical. I shall describe in the fourth chapter the methods by which the different sounds are produced and shew from their character what interchange of them is *a priori* to be expected in any given language. It will there be shewn that, for example, *k* is a stronger sound than *p*; that is, that *k* demands a larger amount of muscular exertion to produce it with the same intensity as *p*; the check is applied to the current of air issuing from the lungs at an earlier point in its course; and for this reason (with others less obvious) the sound requires more effort to pronounce. In harmony with this is the historical fact that in Sanskrit, Greek, Latin, and Gothic, the gutturals are found less frequently than the dentals or labials[2]; and we should naturally expect those letters to be more sparingly used which required the largest amount of labour in production; they would either be not employed at all, or would pass into easier sounds, or be altogether dropped, in words in much use, like pronouns, or in suffixes where neatness and convenience were essential. Again, in many languages we find by-forms, weaker gutturals existing beside and sometimes superseding the full gutturals *k* and *g*: while we do not find similar by-forms of the labials to anything like the same extent. Accordingly from these two distinct lines of reasoning—the *a priori* road of physiology, and the more positive arguments supplied by observed facts in different languages which are not operating the one upon the other—we infer that *k* is always a stronger sound than *p* for our group of languages, and we are justified in applying that result to any language of the group. For example, in Greek we shall conclude that κοῖος is an older form than ποῖος; that ποῖος must be derived from κοῖος, not *vice versa.* So in Latin where we find side by side the words *coquina* and *popina,* we shall conclude that *popina* is a later, probably dialectical, variation of *coquina* which at an early period fell out of use at Rome, but was originally, as Varro tells us, used for a kitchen; and we shall see a possible reason for the change in the parasitic labial sound *u* which forms no part of either root or suffix, which had power to assimilate the final *c* of the √ *coc* (whence *cocus,* &c.), and so turn the guttural to a labial: which in turn assimilated also the initial *c.*

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[1] See the tables in A. J. Ellis' *Early English Pronunciation*, Vol. I. p. 28.

[2] Curtius, *Griechische Etymologie*, p. 407.

Thus then the general principle of phonetic change, and the general directions which such change will take, are given by comparative philology assisted by physiology. But different peoples varied much in the extent to which they proceeded along these different paths of change. Thus the Greeks made but one variation in dealing with the original aspirates; then they stopped, and the Greek aspirates are used with as much regularity as those of the original language. The Italians on the contrary, feeling the aspirates too difficult sounds, allowed them to degrade so completely, that the single Italian spirant *f* represents not only the labial aspirate *bh,* but *dh* not unfrequently, and occasionally even *gh.* On the other hand the Greeks have thoroughly weakened the spirants *y, s, v*; the Italians retained in the main the sounds, if not the symbols. From this it is obvious that the study of Comparative Philology can never supersede the necessity of thorough investigation of each particular language for itself. Greek and Latin etymology can only be known by historical investigation of the Greek and Latin languages themselves.

Apparent exceptions to the principle.

As a rule, the weaker sound is later than the stronger. But to this rule there are undoubtedly some exceptions. All such cases will however I believe be found on examination to be less apparent examples of the general law—namely, that phonetic change arises from the striving—conscious or unconscious—for ease of articulation. A soft letter sometimes changes to a hard from the influence of neighbouring sounds: for example, the *g* of √*frag*—whence *fragor*, &c.—is hardened to *k* in *fractus*. This of course takes place because it is much harder to articulate a soft consonant and then a hard one immediately afterwards than it is to pronounce two hards together. The principle of assimilation has come in and reversed the common rule of phonetic change; but assimilation itself is an instance of the wider principle. Similarly *hiemps* would seem to be a stronger form than *hiems:* and certainly the *p* is merely phonetic and belongs neither to the base nor to the case-suffix *s*. But because it is very difficult to sound *s* immediately after the labial nasal *m*, in an indistinct less energetic pronunciation of the word, a weak *p* was heard, to bridge over the difficulty: and this made its way at last into the written word. But the new form though heavier is still easier to sound than the old one. Ease of pronunciation was the reason why *fragtus* became *fractus* and *hiem-s* was increased to *hiemps*, just as much as it caused the weakening, e.g. of *stlites* into *lites* and *esam* into *eram*. Sometimes we find that the general endeavour for easier pronunciation takes the form of striving after greater distinctness of sound, and so has the effect of strengthening a weaker letter. Thus the Greeks unable to pronounce θιθημι clearly changed the first aspirate into the stronger tenuis. But the change also is based on the fact that τίθημι is an easier word to pronounce than θιθημι. Taken by itself τ requires more effort to pronounce than θ: the check is more complete in pronouncing τ than in pronouncing θ (i.e. *t'h*, where the *h* is due to a portion of the breath being allowed to escape before the *t* is fully sounded). But when θ occurs at the beginning of two consecutive syllables, a greater effort is required to place the organs of speech twice in the necessary position for producing it. All these and other apparent exceptions arising from assimilation and dissimilation of sounds, or from indistinct articulation, will be fully described in their proper places.

Different theories upon this subject.

A different cause has been assigned for certain variations of sound by Prof. Max Müller in his valuable lectures on the Science of Language: he supposes an originally indistinct sound, capable of passing into different forms in different languages or different dialects of the same language. In the fourth lecture of his second series, he gives several examples of "phonetic degeneracy:" and he says (p. 176) that the principal cause of this is "when people attempt to economize their breath and muscular energy." But beside this cause of variation, and distinct from it, he mentions another, which he calls "Dialectic Growth" (p. 180). By this he accounts for the phonetic diversity which is seen e.g. in the Sanskrit *gharma*, Greek θερμό-ς, Latin *formus*—all undoubtedly modifications of one Indo-European word meaning hot. These forms, he thinks, point to "a previous state of language, in which, as in the Polynesian dialects, the two or three principal points of consonantal contact were not yet felt as definitely separated from each other." Thus in the instance given above, the three forms were received by the three languages from some earlier stage, in which the articulation of the original word was so vague that it might take any one of the forms mentioned. This is possible, nor is the theory confuted by the *a priori* objection made to it by Prof. Curtius[1], that such indistinctness of sound is inconsistent with the strong articulation which peculiarly belongs to the oldest languages. But there seems to me more weight in his question, what the sound could have been which was capable of such strange variation. The numeral five is expressed by *panchan* in Sanskrit, πέντε in common Greek, πέμπε in Aeolic, *quinque* in Latin, *pomtis* in Oscan, *fimf* in Gothic, *penki* in Lithuanian. What can the two consonantal sounds have originally been which could be strengthened or weakened in so many ways? Prof. Müller speaks of "phonetic idiosyncrasies" in particular languages: which seems to me only another title for weaknesses of articulation become hereditary by transmission from one generation to another. But he allows[2] that "these idiosyncrasies are quite inadequate to explain why the Latin *coquo* should in Greek appear as πέπτω." Professor Curtius thinks that the change from original *k* to *p* as in πεπτω, or from *k* to *t* as in τις (Sk. *kis*, Lat. *quis*) is to be explained by the involuntary springing up of parasitic sounds: thus that a *u* or *v* by relaxed articulation was sounded after the *k*—as it actually did spring up in the Latin, e.g. *ting-u-o* (Gr. τέγγω); and we may hear similar cases of relaxed articulation in England, e.g. *ne-a* for nay, and *ge-ate* for gate in Cumberland: and *fi-ound* for found, &c. in Suffolk—then this labial *v* by degrees corrupted the *k* to the labial *p*, and then vanished. Similarly *t* might arise from *k* by the mediation of a parasitic *y*—thus, *k, ky, ty, t*: the change from *k* to *t* being caused by just the same indistinct articulation which in England causes us often to hear *tloth,* and not *cloth,* and *dlory* not *glory*: though Prof. Max Müller finds it hard to believe it. These variations are of course not universal, only occasional; it is only comparatively a small number of words in which the Attic has weakened a *k,* which the Doric has retained, to *t* or *p*: similarly the Doric has suffered change in some roots as well as the Attic: √Ϝεπ (orig. VAK) is "to speak" in Doric as well as in Attic. I think that the theory given above is sufficient to explain most of the cases: and thus they are all instances of a weakening tendency, gradually affecting different dialects and languages, and resisted by them in proportion to the firmness of their articulation; affecting for example the Doric least, the Attic considerably, the Aeolic (compare *πέμπε* and *πίσυρες*[1] with the Attic *πέντε* and *τέσσαρες*) most of all; leaving the Latin untouched, but attacking the Oscan severely[2].

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[1] *Gr. Et.* p. 380, note.

[2] p. 184.

Results of the combination of phonetic laws of different peoples.

Many apparent and some real exceptions to this principle will be found in languages which have been largely affected by the introduction of foreign words: and still more where a whole people has adopted the language of another race. Such a people retains its own peculiarities of pronunciation; it finds in the new language some sounds which are strange to it, and which it cannot pronounce: therefore it either drops them altogether, or more probably substitutes for them the nearest of its own, especially if such sounds do not occur in the strange language. Thus old sounds are lost and new ones introduced; and it is quite uncertain whether the new sound will be an easier one than the old. We have a good illustration close at home, the way in which the Keltic tendency to aspirate unaspirated sounds has affected the pronunciation of English in Ireland: e.g. car is sounded like k'har, which is nothing but a Kelto-English variation. The full sound of the *a* is also retained in Ireland, where we have weakened it in England. Many instances where admixture of race has operated on sound will be found in French, e.g. guêpe, guerre, &c. It is commonly supposed that guêpe is from *vespa*[1], in which case the *g* must be due to the Frankish pronunciation of a Latin word, for there is no tendency in Latin to a parasitic *g* before a *w*. But it is certainly remarkable (as Max Müller has pointed out[2]) that all these French words beginning with *gu* can be traced to German words. It is better to suppose that this *gu* was the attempt of the descendants of the Romans to pronounce a German *w*, after they had let their own *w* sound become *v*, as it now is. But whichever explanation we take, we must recognise the change as resulting from the conflicting phonetic laws of two mixed peoples[3].

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[1] It is not quite certain that *πίσυρες* is Aeolic: it is old Ionic.

[2] Dr Donaldson (*New Cratylus*, § 121) explained this difference of sound as having been produced by "the law of divergent articulations" from "the union of the original guttural and labial *kp*." I am obliged to reject this terrible combination of sounds, because I see no reason to believe that our forefathers possessed much more flexible muscles than we do. He says (*ib.* § 110) that "the regular series of transitions, which such a combination of the guttural and labial would present, may easily be described: the guttural may be represented by *k*, *q*, *g*, *j*, *s*, *h*, the labial by *p*, *b*, *v*; and these sets of letters may be permuted with each other to any extent." Just before he says, "in those cases where a dental makes its appearance, it must be considered as having arisen by a fault of articulation from the sibilant:" so that *t* and *d* must be added to the permutations of the guttural. This is indeed etymology made very easy!

It may perhaps be thought that in these lectures too little reference is made to the works of one of the most active and independent of English philologists. As an old pupil, I should wish to do the fullest honour to the genius, learning, and untiring energy of Dr Donaldson: as such also I cannot but regret the failures in judgment (as they seem to me) which led him either to statements like those quoted above, which would degrade etymology to the mere juggling pastime that it is sometimes held to be, and render scientific treatment of it impossible—or to the wild and groundless ethnological theories which mar the *Varronianus*. If such theories were given as mere theories, no harm would be done; but they are put on the same footing with inductions as certain as those of any science can possibly be. It is this mixture of the proven and not-proven which must make Dr Donaldson's books unfit for students of comparative philology.

Erroneous spelling to suit supposed etymologies.

It is well known that from this operation of a double set of phonetic laws the same word may exist in two forms in the same language: as in English "crab" and "cray-fish," the latter being the French écrevisse from German krebiz, krebs[4]. The etymological tendency exhibited in "cray-fish" is the last point which I wish to consider in this chapter. The French form being strange to the English ear, it was converted into something which would convey a meaning. We have here nothing but a highly irregular application of the striving for distinctness which I have already mentioned as acting counter to ordinary phonetic change; I say, irregular, because it is impossible to predict in what way it may act. A great number of instances may be found in Cumberland where a Norse colony settled, probably in the latter half of the tenth century, and introduced words which in after time had a strange sound, and were identified with whatever English word they resembled. Thus "foss," a waterfall (as in Norway at the present day), was confused with "force" (*fortis*), and so we get Scale Force, &c.: the proper names Koli and Mioll are disguised in Coal Gill and Mill How, and the compound name Toli-Wagen has given us Dolly Waggon Pike upon Helvellyn[1].

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[1] Brachet, *Fr. Grammar*, p. 64: Roby, p. 18.

[2] *Lectures* 2, 267.

[3] For the history of the effect of the Teutonic on the Roman languages see Diez, *Introduction to the Grammar of the Romance Languages*, trans. Cayley, p. 60.

[4] *Ib.* p. 68.

The results of this principle of change are very numerous in composite languages like the English. I do not however imagine that it operated much on the Greek and Latin languages. Greek in the stage at which we know it, could have little admixture which is not manifest at the first glance: and the Latin was not much more affected. In pure languages, I conclude (in spite of a few real and some apparent exceptions), phonetic change has a downward tendency; it causes in general weakening of the language, even though that weakening may be usefully employed. What then was the original, of which the Greek and Latin are copies, weakened each in its own peculiar way? This will be the subject of the next Chapter.

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[1] See Ferguson, *Northmen in Cumberland*, for these and many other etymologies.

NOTE TO CHAPTER I.

ON THE DERIVATION OF LATIN WORDS FROM GREEK.

The facts are so very simple, yet there is so much misconception about them, that it seems worth while to say a word on the supposed derivation of Latin words from Greek. This theory is probably to be attributed to Niebuhr's hypothesis of a Greek and non-Greek element in the Latin language, which made its way into English works without much examination through the influence of Niebuhr's extraordinary genius; but which has been completely overthrown by Comparative Philology. The apparently Greek element in the Latin language is (generally speaking) that part of the common inheritance of the Greeks and Italians, which each nation retained and developed after the separation of the two branches of the original stock[1]. The apparently non-Greek element is that portion of the common inheritance which was neglected by the Greeks—or, if retained by provincial and obscure dialects, was disused by those which possessed a literature; which therefore in process of time seemed to be—to some extent actually was—peculiar to the Italians.

What then are we to say of words like *lyra*, &c.? Are not these derived from the Greek? Certainly not *derived*. No Latin word is derived from the Greek in the proper sense of the term. The Latin *borrowed* words fully formed from the Greek, which it spelt on different principles according to the different times at which they became nationalised. At the earliest period at which such borrowed words occur, we find them spelt with such Latin characters as most nearly represented those Greek sounds which had either been developed by the Greek after the parting of the two peoples, or which had been lost by the Latins out of the original common stock. Thus the

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[1] See this more developed in Max Müller, *Chips from a German Workshop*, II. 41, &c.

Greek aspirates—peculiar developments of the Greek—appeared in Latin as unaspirated mutes; e.g. *Aciles* (Ἀχίλλευς), *Burrus* (Πυῤῥός); this last word and *Bruges* (φρύγες) shew that the full Latin *u* was taken as the nearest Latin exponent of the Greek *upsilon* (a modified *u*), and in Plautus *ss* appears as the best representative of the strong Greek ζ (which differed from the old weak Italian *z*) in *badisso*, *tarpessita*, &c. In the Augustan age, on the contrary, Greek characters are borrowed as well as the sounds, the Y in *lyra*, the Z in *zona*, &c.: while a combination of letters represented the complex sound of the Greek aspirates—*chorda*, *philosophia*, &c. Now it is obvious that these words were not *derived* from the Greek; they were not formed from a Greek root by adding to it a Latin suffix; they were derived in Greece from Greek roots by Greek suffixes and transplanted when fully grown into Latin. They are as foreign to the Latin language and its development, as the men and things they represent were foreign to Rome. But from these borrowed Greek words it was inferred by a false analogy that numbers of genuine Latin words were borrowed from the Greek. Because *lyra* was the Greek λύρα, it was supposed that *lacruma* was the Greek δάκρυμα; and consequently it was written *lacryma*, or even by some curious fatality *lachryma*. But in truth the words have nothing in common except their base *dakr* (whence the A.-S. *teagor*, our "tear"); each was formed from that base, but by its own suffix in its own land: the emotional Italian was not likely to lack a word for a tear, till he had borrowed it from the Greek! In other cases—e.g. the Latin *silua*, no doubt the noun SVLVĀ existed in Graeco-Italian days, and was then modified by the two peoples in different ways according to their different phonetic laws. But it is an entire mistake to write *silua* with a *y*, that is, to imply that the word was borrowed from the Greek ὕλη. Indeed the Latin has kept the old form more nearly than the Greek; it has changed *u* to *i*, and *ā* to *ă*, both regular Latin changes, and both weakenings; but ὕλη exhibits no less than four weakenings; *s* has passed into the rough breathing; *u* has (as always in Greek) been weakened to *upsilon;* *v* has passed out altogether, and ā has been thinned to η.

The rule then to follow in writing Latin is very simple:

we must use the letters Y, Z, and the compounds CH, TH, PH, in words borrowed from the Greek and in no others. Such words are not difficult to recognise. They are mostly words relating to the arts and sciences which the Romans borrowed from the Greeks. All other words are, in ninety-nine cases out of a hundred, genuine Latin, and should be written in the Latin character. The only exception which should be allowed is in cases where we have express testimony that Roman writers in the last century of the Republic employed Greek characters—or the equivalent compounds in Latin—in words which are beyond doubt genuinely Latin, but which by a mistaken analogy were then supposed to be derived from the Greek. In such cases we may write, e.g. *pulcher*[1]—though we believe it to be etymologically wrong—on the same principle that we write, e.g. *caussa,* and *querella;* because they represent the spelling which, rightly or wrongly, was in use in Cicero's day among educated men; not because we believe it to be the Greek πολύχροος[2]. Lucretius truly says, "Utilitas expressit nomina rerum;" and it is equally true that use must always be the standard of orthography, and must override etymological considerations. Only let our standard in Latin be the usage of Cicero's time, not of the period of the Renaissance.

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[1] See Cic. *Orat.* c. 48. § 160.

[2] It is possible however the *h* in this and similar words, *Cethegus, Carthago,* &c., may have nothing to do with the Greek, but may be a vulgar use of the aspirate which was passing into the literary language in Cicero's day. His phrase "usum loquendi *populo* concessi" rather supports this view. See additional evidence in the section on "Aspiration" in the last chapter of this book, and Roscher, *de Aspiratione apud Romanos* in Curtius, *Studien,* II. 2. 143, &c.

CHAPTER II.

RELATIONSHIP OF THE INDO-EUROPEAN PEOPLES.

I TRANSLATE from Schleicher[1] the very brief and clear account of the main divisions and subdivisions of the variously called Indo-European, Indo-Germanic, or Aryan language: to which can be traced nearly all the languages of Europe[2], and two at least of those of Asia, the Sanskrit and the Zend.

Classification of the Indo-European peoples.

"The name of Indo-Germanic has been given to a certain class of the languages of the Asiatic-European portion of the earth, which are so accordant with each other, and which differ so much from all other languages in their nature, that they clearly show themselves to have sprung from a common original language. Within this Indo-Germanic family of languages, some, which are more closely geographically connected, shew themselves certainly to be the most nearly allied, so that the Indo-Germanic family divides into three groups or divisions. These are—

(i.) *Aryan or Asiatic.*

"I. The Aryan[3] division, consisting of the *Indian* and *Iranian*, or more correctly *Eranian*, families of languages, which are very closely related to each other.

"The oldest representative and original language of the Indian family, and the oldest[4] known language of the

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[1] *Compendium der Vergleichenden Grammatik*, pp. 6—8.

[2] See note at the end of the chapter.

[3] It will be seen that the term Aryan is here applied only to the two Asiatic peoples who can be certainly proved to have called themselves by that name.

[4] Prof. Schleicher of course does not mean that the Sanskrit existed before the Greek and Latin, but that it is known to us in an older stage than any other. The error which arises from regarding every Sanskrit form as older than the corresponding forms in Greek and Latin will be noticed at p. 31.

Indo-Germanic tongue altogether, is the old Indian, the language of the oldest portion of the Vedas; at a later time in a simpler form and as a grammatical literary language, contrasted with the popular dialects, named *Sanskrit.*

"We do not know *Eranian* in its original form; the oldest Eranian languages which have reached us are the old Bactrian or *Zend* (the eastern), and the old Persian, the language of the Achaemenidean cuneiform inscriptions (the western). To this family belongs also the Armenian, which we first know at a later time, and which must have separated earlier from the Eranian original language.

(ii.) *South European.*

"II. The south-western European portion consisting of (1) the *Greek*, nearest to which stands a language only known in its modern form, the *Albanian:* (2) the *Italian;* the oldest known forms of this family are the *Latin,*—and especially important for us is the old Latin, as it was spoken before the introduction of the educated literary language moulded by Greek influence,—the *Umbrian,* and the *Oscan:* (3) the *Keltic:* the best preserved, but still very decomposed, language of the Keltic family is the *Old Irish,* reaching from the 7th century of our era.

(iii.) *North European.*

"III. The northern European portion, consisting of the *Sclavonic* family, with the closely allied *Lithuanian* (which is for us the important language among this group), and the *Teutonic,* which is widely sundered from both.

"The oldest forms of language in this portion are the *Old Bulgarian*—old Ecclesiastical Sclavonic in MS., dating up to the 11th century: the *Lithuanian*—first brought under our notice three hundred years ago, but clearly of much higher antiquity—and the *Gothic,* of the fourth century. Near to the Gothic, however, are the most ancient representatives of the German and the Norse, the Old High-German and Old Norse, to be brought forward where they present older forms than the Gothic.

"It is in the Asiatic division that is contained most that is ancient in the sounds and in the fabric of language, and here again especially in the *Old Indian.* Then follows with reference to antiquity—that is to say, in the retaining its similarity to the original language, in having fewer strongly developed individual forms—the southern European division, in which the Greek had remained closest to the original; finally, the northern European group, which, taken as a whole, presents itself as developed with the most individuality, and in which the least remains of the original speech are to be traced.

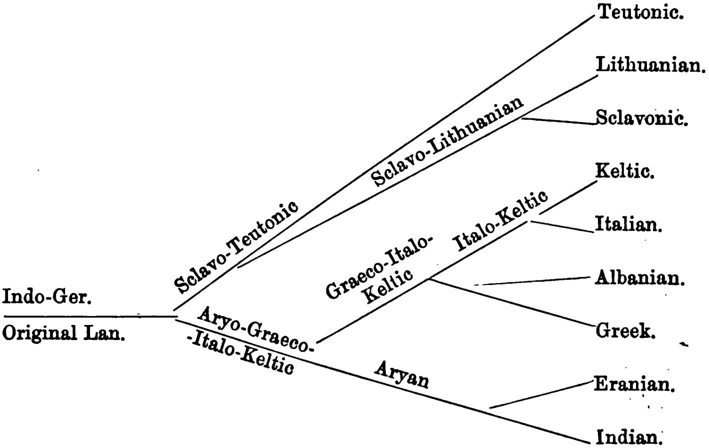
Their degrees of relationship.

"If we combine this statement with the relationship already described of the Indo-Germanic languages among themselves, and draw from the two our conclusion as to the process of the divisions of the main body of Indo-Germanic speech in the earliest times, we arrive at the following results: The Indo-Germanic original speech divided itself, first, by the unequal development in different parts of its province, into two sections: it divided off from itself the *Sclavo-Teutonic,* the language which afterwards divided into Teutonic and Sclavo-Lithuanian: and later, that portion of the original speech which remained, the *Aryo-Graeco-Italo-Keltic,* divided itself into Graeco-Italo-Keltic and Aryan, of which the first-named soon divided itself into Greek and Italo-Keltic: and the latter, the Aryan, remained undivided for a considerable time.

"At a later period the Sclavo-Lithuanian, the Aryan (Indo-Eranian), and Italo-Keltic further divided themselves. It is possible that at some or all of the divisions more languages arose than are now manifest, as in many instances in process of time Indo-Germanic languages have probably become extinct. The more towards the East an Indo-Germanic people lives, so much more of what is ancient has their language retained. The more towards the west they have gone, so much the less of what is old, and so many more new formations are to be found in their language. From these and other intimations we may conclude that the Sclavo-Teutonic race first began their journeyings towards the west: then followed the Græco-Italo-Keltic: of the Aryans who remained behind, the Indians travelled south-eastward, and the Eranians spread in a south-westerly direction. The home of the original Indo-Germanic race is to be sought in the central highlands of Asia.

"It is only of the Indians, who were the last to separate from the parent stem, that we can say with any certainty that they drove out an aboriginal people from their later dwelling-place, much of whose language passed into their own; of many of the other Indo-Germanic peoples such an hypothesis is highly probable."

Prof. Schleicher proceeds to show the degrees of relationship of the main families of the Indo-Germanic speech by the diagram given below; in which the length of the lines indicates the probable time of separation.



Connection between the Latin and Keltic [illegible] given by [illegible]cher.

I have given above Schleicher's view of the near connection of the Keltic with the Italian, which is disputable. I may briefly give here some of the principal arguments on both sides, though their force will not be seen without some knowledge of the phonetic laws described in the following chapters. Schleicher believes in a "Graeco-Italo-Keltisch" period: in which the ancestors of those peoples divided the *a* sound into *a*, *e*, *o*, after parting from the Teutonic race, or at least the Gothic division of it. Then the Greeks parted off, and an Italo-Keltic period followed, distinguished by the loss of aspirates and retention of spirants, and notably also by the loss of the old middle voice and the formation of a quite new form peculiar to the Italians and the Kelts: compare legi*tur*, Keltic leg*thar*, with *λέγεται*. After their final separation the Kelts lost the ablative and the reduplicated perfect, losses which distinguish Keltic from Italian. Other points of agreement between the Keltic and Italian, not found between any other two languages, are the formative suffix *-tion* (*-sion*), and perhaps *-tric;* the dative plural in *b*, *fratribus*, *braithrib*, while all the North European languages have *m*, e.g. Gothic *brōthrum*, the termination *i* alike for the genitive singular and nominative plural of the *a*-stem, and the future suffix *-bo*, *-bis*, &c., for which forms in *b* and *f* appear in old Irish. Lottner and Ebel, on the other hand, connect the Keltic with the North European languages[1]. They argue from the agreement of diphthongs (*ai*, *oi*, *au*, *iu*, in Keltic, *ai*, *ei*, *au*, *iu*, in Teutonic, four in each language, while the Graeco-Italians certainly had six, *ai*, *ei*, *oi*, *au*, *eu*, *ou*): and from the different origin of some consonants; thus the Kymric[2] *ch* is from *h*, a substitute for *s*, the Gaelic *f* is a hardened *v*, the Kymric *f*, according to Ebel, is derived from *s*, except where it occurs in words certainly borrowed from the Latin; on the other hand the Latin *h* and *f* come from aspirates, not from other spirants.

Counter-arguments of Ebel.

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[1] Ebel's arguments may be seen in *Keltische Studien* (Engl. trans., pp. 119—132). See also Schleicher's *Kurzer Abriss der Gesch. der Ital. Sprachen* in the *Rheinisches Museum* for 1859, and Ebel in Kuhn and Schleicher's *Beiträge*, I. 429.

[2] Keltic comprises the *Kymric* or Welsh, the now extinct *Cornish*, and the *Armorican*, or ancient language of Brittany: these three are nearly related, and are sometimes all included under the name Kymric. More distinct are the *Erse* or old Irish, the *Gaelic* of the Highlands, and the *Manx:* these are all sometimes called Gadhelic.

Some agreements in inflexion between the Keltic and Lithuanian are not nearly so convincing as Schleicher's which are given above. Lastly, Ebel sees "a pervading analogy in the Sclavonian, Teutonic, and both branches of the Keltic[1]," evidenced, for instance, by the employment of prefixes to express completed action, instead of reduplication, as in Graeco-Italian; such prefixes are *ru* or *ro* in Keltic, *ga* in Gothic, the modern German *ge*, both of which have this force, though also some others.

Nature of the arguments.

The arguments on both sides, it will be observed, are confined to the forms and inflexions of words: they are not drawn from the common possession (which is indubitable) of very many words by the Latin and Keltic, especially the Kymric. The reason is that it is generally impossible to distinguish between the genuinely Keltic words and those which were only borrowed from the Latin after the Romans came into contact with the Kelts. When we find words like *fin* and *flam*, occurring only in Kymric and Armorican, there can be no doubt that we have here *finis* and *flamma* borrowed. But when we find words like "traeth," a sandy flat, occurring in Kymric, and in slightly different forms in Cornish, Armorican, Irish, and Gaelic, it seems unlikely that each of these races, which were probably separate before the Romans came into contact with them, either independently borrowed the Latin "tractus," or passed it on from one to another. Still Ebel's list of borrowed words (in which *traeth* occurs) cannot often be challenged, and it is incomparably larger than that of words which are peculiar to the Latin and Keltic, and not shared by the North Europeans. We are therefore forced back upon the arguments from forms given above. Now such arguments are, generally speaking, stronger than any mere agreement of words. But in this case they lose much of their usual force from the obviously late character of a great part of Keltic grammar. Thus the personal suffixes of the Welsh verbs have hardly anything in common with the Irish; they are clearly new Kymric developments, while the Irish has preserved the older forms. Similar novelties occur in every division of Keltic grammar, the Irish included. All that we can therefore say is, that we cannot expect, under the circumstances, to find greater analogies than those which Schleicher has pointed out: they are not conclusive, but they are all that can be had. I think his case is stronger than that of his opponents[1].

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[1] *Celtic Studies*, p. 128.

The Hellenic subdivisions:

It may be useful to sketch very briefly the divisions of the Hellenic speech. The divisions of the Italian race (as proved by linguistic research, not mere tradition), are given by Mommsen, in his *History of Rome*, which is already well known in England. The old threefold division of the Hellenes into Dores, Aeoles, and Iones, requires further subdivision.

i. *Doric, hard and soft;*

The grammarians early recognised two forms of Doric: one the harder or more severe, spoken by the Laconians, the islanders of Crete, in Cyrene, and in the Greek cities of Italy: the other softer, called *ἀνειμένη καὶ χθαμαλὴ Δωρίς* by a scholiast on Theokritus, which was commonly used by that writer (though, at least, as we have the text, with many forms of the severe Doric intermixed), as by Epicharmus and Sophron before him, and by the Sicilians in general, and the Dorians of Messene, Argolis, and Megara, and Greece proper, and the islands near Asia Minor. The hard Doric has most peculiarities in common with the Aeolic, the soft Doric with the Ionic: but to this general statement there are a good many exceptions, which will appear hereafter. Time also brought the hard Doric into greater conformity with the soft: this transition varied of course with the circumstances of the speakers: thus the isolated people of Cyrene, in the second century B.C., retained forms which were falling out elsewhere in the fourth. It may be added that the *πλατειασμός*, commonly supposed to distinguish all Doric[2], was certainly not peculiar to the Dorians, but shared by them with nearly all the Aeolic race.

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[1] I ought to say that I am unfortunately not a Keltic scholar.

[2] Compare Theok. xv. 88; see however the discussion upon the sound of the *α* at the end of § 1 of chapter VII.

ii. *Aeolic;*

(1) *Lesbian,*

(2) *Boeotian,*

(3) *Thessalian;*

The most important subdivisions of the Aeolic speech are the Lesbian, or Aeolic of Asia Minor, the Thessalian, and the Boeotian: probably the Arcadian and the Elean should be added. The Lesbian is principally known to us by inscriptions, and by the fragments of Alkaeus and Sappho: the twenty-eighth and twenty-ninth idylls of Theokritus are also Lesbian, and have been excellently restored by Ahrens. A peculiarity of this dialect is the extensive throwing back of the accent; also a rather greater loss of the rough breathing. The symbol of the digamma was retained longer than by the Ionians, but not so long as by the Boeotians, or by the Italian Dorians: the sound was passing out in Asia Minor about the same time. The Lesbian and Boeotian are principally marked as members of one head-dialect by their strong tendency to assimilation of consonants—of the nasals, liquids, and sibilants in Lesbian, and of the dentals in Boeotian; and by the tendency to weaken an original *a* sound to *o* and *u* in the Lesbian, to *i* in the Boeotian; this identity of principle, but difference of practice, is just what might be expected from kindred tribes separated widely in abode. The Boeotian is known to us principally by inscriptions and by the fragments of Corinna. The Thessalian (which is known by very few inscriptions) appears to combine their peculiarities: it doubles both liquids and dentals, and it weakens *a* into *o*, with the Lesbian, while in some minor vowel changes it agrees with the Boeotian. It thus serves as a connecting link between the two, and vindicates their title to a community of origin more recent than the first separate existence of the Hellenic stock. The last writer on the subject, Gelbke[1], supposes that Thessaly was their common seat, whence one division passed either by land, or by the islands over the sea to Asia, another to Boeotia, and, if his theory be true, also to the Peloponnesus: for he includes among the Aeolic the Arcadian and Elean dialects, which Ahrens[1] believes to be Doric. Gelbke has the additional evidence of a Tegeatic inscription, and he makes the balance lean to the Aeolic side, though the proof cannot be called conclusive[2]. He places the Arcadian, together with the Lesbian, as inclining towards the Ionic: and he adds the Cyprian; the old legend of the colonisation of Cyprus by Arcadians, on the return from Troy, is supported by linguistic facts. The Eleans, on the other side, he connects rather with the Boeotians, whose language undoubtedly comes nearest to the Doric.

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[1] *De dialecto Arcadica* in Curtius, *Studien*, Vol. II. Part 2.

iii. *Ionic;*

The account commonly given of the Ionic, that it is divided into three periods, the early, that of Homer; the middle, that of Herodotus; and the third, the Attic, is not satisfactory. The Attic is certainly not a development of the Ionic of Herodotus: in many respects, e.g. in still preserving the original *α* after *ρ*, where the Ionic has allowed it to pass into *η*, it represents an older form. The connection of the two is extremely close, more close than the Aeolic of Boeotia and the Aeolic of Asia: probably in the main the Attic has preserved very closely the language spoken at the time of the separation, influenced to some extent by neighbouring dialects; while the Ionic changed more, chiefly to softer sounds, which may possibly be the result of the more luxurious life of Ephesus and Miletus. The older Ionic, which is supposed to be represented by Homer, is delusive. Mr Paley, in his introduction to the *Iliad*, has made it exceedingly probable that the Homeric poems, in their present form, have no claim to their supposed age; but that they were combined at a late date from a very much larger stock of pre-existent materials. This conclusion is completely supported by the language

the Attic,

supposed old Ionic.

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[1] *De dialectis Graecis*, I. 225. The above sketch is principally taken from this most valuable work, which, though published more than thirty years ago, is still the best on the subject.

[2] It consists chiefly of certain vowel changes: the Arcadians have the peculiar *υ* of the Lesbians, *e.g.* Lesb. *ἀπύ*, Arcadian *κατύ*; a number of words where *ο* occurs *πόρνοψ*, *κόρζα* (*i.e.* *καρδία*), &c., and many other minute points.

CH. II.

of the poems: the forms of the words bear the impress of a school of poets who were writing in a language not that spoken in their day, but one containing many archaic forms, and many others formed on their model which were probably never used at all in actual life. This has been clearly pointed out by Curtius[1]; and "it is certain," as he says, "that this dialect is the production of a conventional minstrel-usage, which preserved a number of very old forms and sounds regarded as in process of extinction; but at the same time availed itself of many formations of later date, and evidently in contemporary use." It is clear then that, though we may find many old forms here, we find no genuine old Ionic dialect.

Gelbke's hypothesis that the Asiatic Aeoles passed from Thessaly to Asia Minor is not inconsistent with that of Prof. E. Curtius, who, in his recent *History of Greece*, reverses the account commonly given of the Ionians, and makes the Asiatic settlements the oldest; from these brings the inhabitants of Attica across by the islands, while the Dores came by the northern mainland. These may have passed by the Aeoles while they were still in their original abode: then the retrograde Aeolic movement into Asia may have been by the mainland, or possibly by the islands.

Is the original people properly called Aryan?

I now return to the primitive people; to which I prefer to give the rather superseded title Indo-European. I prefer it to the name Aryan, rendered popular by Prof. Max Müller's most suggestive lectures, because I think that there is no sufficient evidence that that name was ever adopted by any other than the Asiatic branch of the family. The tracing by Prof. M. Müller[2] of "the ancient name of Arya from India to Ireland" seems, to say the least, very uncertain: and the connection of the word *ârya* with the root found in *arare*[3] is unlikely. Surely the simplest way is to connect it with the widely extended √ AR, to fit: whence the derivative might get the successive meanings of fitting, worthy, noble; a sequence of meaning very similar to that of the Sanskrit *sat*, originally *(a)sa(n)t*, the present participle of AS, to be, which signifies first being, then "actually existing," "true," "good." Why should not the eastern family of the Indo-European race—the ancestors of the Hindus and of the Persians—have called themselves "the noble" in opposition to the indigenous tribes whom they subjugated, just as the old Greek nobles called themselves the *ἐσθλοί* and *ἀγαθοί*, and the Roman conservatives styled themselves the "boni"? The evidence of names like Ariovistus, and the very dubious Erin and Ireland, is too slight to warrant us in supposing that the use of the term *ârya* in its derived sense is older than the time when the Hindus and Persians remained together as one people after the separation of the Eastern and Western branches.

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[1] In his *Erläuterungen*, p. 46, Eng. trans. The proof is too long to give here: but instances will be given in a later chapter.

[2] *Lectures*, Series I. p. 236.

[3] *Id.* p. 226.

Importance sometimes given erroneously to Sanskrit.

The readiness with which the name Aryan has been accepted as the designation of the entire family, might almost seem to be a trace of the erroneous belief till late almost universal—a belief of course not shared by Prof. Max Müller—that Sanskrit existed at an earlier period than its sisters: and by consequence that every form found in Sanskrit must represent the primitive form more nearly than any other, if indeed it be not the primitive form itself. This error was indeed a natural one: it arose from the fact that our records of Sanskrit speech stretch back to a much earlier time than those of any of the sister languages, and still more from the peculiar character of the language. Compared with Greek and Latin, Sanskrit may be said to have no syntax. Long sentences are expressed by enormous compounds, sometimes extending over many lines, consisting generally of bases[1], of which the last only is inflected. By these the syntactic relations of other languages are given with considerable ease, though without much precision. This habit, however, made it necessary for the Hindus to keep the formative part of their grammar excessively clear; to keep roots and suffixes, all the formative machinery, unconfused in order that they might be compounded as need arose. Consequently it was found that Sanskrit words could be dissected with an ease unknown in Greek and Latin: older forms were brought to light which were just traceable in their corrupted state in those languages in which root and suffix have run into one. Much in them was therefore clearly shewn to be secondary and derived: and it was not unnaturally thought sometimes that Sanskrit was the primitive speech of the race. Still, very little consideration will shew that it does not necessarily follow from this that Sanskrit must in every case present to us the oldest form of verb or noun, of derivative or inflective suffix. As a matter of fact, there is hardly any language—not even the most corrupted of modern tongues—which does not occasionally shew us a more antique form than the Sanskrit. Thus the Greek *ἀ-στέρ-* (where the *a* is phonetic), the Latin *stella* (for *ster-ula*); the Gothic *stair-nô*, German *stern*, and Dutch *ster*, can leave no doubt on our mind that our own "star" represents more faithfully the name by which our fathers knew the "scatterers of light," than the corrupted Sanskrit *târa*, where the *s* has been lost by relaxed articulation: whilst the identity of the Sanskrit word with the more perfect form preserved by the sister languages is evidenced by the Vedic *staras*. In fact Sanskrit, eminently conservative as it was of derivative and inflectional forms, can shew at least as large a list of weakenings of particular letters or groups of letters, as any Western language[1].

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[1] Sometimes, but rarely, a case is used instead of a base: e.g. *parantapa*, i.e. *param-tapa* = *hostem-uexator*. Similar examples occur in Latin, e.g. *iuris-consultus*, beside the more regular *opi-parus*, *uiti-sator*, &c.

So also in Greek we have *ὀρεσί-τροφος*, *Ναυσί-θοος*; contrast *ναύ-λοχος*, &c. Compounds formed with bases, as in Sanskrit, are by far the most usual.

[1] So also many English words are older than the corresponding Greek form: "work" is older than *ἔργον*, where the *w* has been dropped; as

The primitive form in every case is to be discovered only by tracing the word up through all the main divisions of the original speech in which it occurs. To do this requires care, acuteness, and knowledge of the special phonetic laws of each language. Neither similarity of sound, nor identity of meaning, alone is sufficient to prove the identity of similar words in different languages. Nay there are cases where identity of sound is an almost certain proof that the words must be of different origin; had they sprung from the same word they must in obedience to ascertained phonetic laws have taken *different* forms in different languages. Thus no one doubts that the English "kin" (Goth. *kuni*) is the same word as the Greek γένος. But if our English word had begun with *g* and not with *k*, we should have known the two words though identical in sound must have been of different origin: because in accordance with an ascertained sequence of sound—well known by the name of Grimm's law—*k*, and not *g*, is the letter which in Low German corresponds to γ in the same Greek word. Correspondence then of sound, according to known rules—not necessarily identity—must be insisted upon as necessary for certainty in etymology, as well as identity of meaning. In obedience to this canon we must reject many etymologies which might otherwise seem most certain. Thus probably few would hesitate to identify at first sight the Roman *deus* with the Greek θεός. But in words derived by the two languages from a common source, an initial *d* in Latin has regularly δ corresponding to it in the Greek; as *domus*, δόμος, &c. There is no probable instance of the aspiration, within the Greek language, of an initial unaspirated letter: though sometimes a medial letter is aspirated generally through the influence of an adjoining nasal or sibilant. The two words therefore must be kept distinct. *Deus* no doubt is to be referred together with the Sanskrit *deva* to the Indo-

Necessary cautions.

Mr Cockayne rightly points out in his amusing work *Spoon and Sparrow* p. 8; where however not all things are right.

Eur. root DIV to shine; which occurs also in Greek in δῖος (i.e. διϜ-*yo*-ς), which in Homer is always used with clear reference to its primary sense, as bright, fair, goodly (δῖα θεάων—a phrase which exhibits well the distinction of meaning); whilst θεῖος means divine, though it sometimes (but rarely) sinks to the sense of distinguished, and so hardly differs from δῖος. The occurrence of δῖος in Greek shews clearly enough that there was no exceptional tendency to aspirate this particular initial δ. Some other origin must be sought for θεός; perhaps √θες a secondary form of √θε the root of τίθημι; though this is rejected by Prof. Curtius[1] in favour of a distinct √θες "to pray," corresponding, as he thinks, to a Latin √*fes* in *festus*, &c.; from which would be derived the curious word θέσσαντο in Pindar[2]. But, be the derivation of θεός what it may, the severance of it from *deus*[3] is a fair example of the rigorous observance of phonetic laws which the science of Comparative Philology demands when properly pursued.

But we must return to our immediate object. We do not now want by comparison of different languages to discover the original forms of the words we find there in their endless modifications. We want to know what those phonetic laws are which have modified the development of Greek and Latin. We must therefore assume the main results of Comparative Philology. We must accept the forms discovered by manifold comparison; and then see how the Greek and Latin forms have varied from them.

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[1] *Gr. Et.* p. 230 ed. 2, and 471 ed. 3.

[2] *Nem.* v. 10.

[3] I find that the sundering of *deus* and θεός has been regarded as a hard saying. I am not convinced however by any arguments which have been brought forward in favour of their identity. A writer in the *Saturday Review* thinks that the occurrence of ἄθεος and of *adeva* in Sanskrit proves the identity of *deva* and θεός. But why should not the compounds have been formed separately, each in its own language? I do not think that ἄθεος occurs early in Greek. The argument assumes that if we find in cognate languages compound words with the same meaning, the parts also of the compounds must necessarily correspond. But no one will maintain this. Because ἄδικος = *iniustus*, and *a* = *in*, is δικο- then = *iusto?* The greater similarity of sound between θεο- and *deva* is only accidental.

Prof. Mayor (*Camb. Jour.* l. c. p. 343) argues from the fact that *medial d* can correspond to θ, which proves nothing, and gives for an example αἴθω = *aedes*, forgetting that here θ = original DH and is perfectly regular. He proceeds to argue from the change in *ab-dere*, *con-dere* &c., where the root is DHA, forgetting that the difficulty he has to account for is the change of original D into θ, not of original DH into *d*. And if the argument were applicable at all, it would be conclusive on the other side; the root DHA *is only* found in Latin in composition, in other words, *d* is only medial.

Specimens of roots and actual words occurring in the Indo-European language will be given in the fifth chapter: they will be selected so as to throw some light on the stage of development, both intellectual and social, which our ancestors had reached before their separation. In the mean time it will be well to discuss first, the nature of the roots and suffixes we have to deal with; and, secondly, the nature of the original sounds, which will involve for the sake of clearness and completeness the consideration of many which were certainly not original. These two subjects will be discussed in the two following chapters.

NOTE.—The languages in Europe which are not Indo-European are those of the Finns, Esths, and Lapps, in the North, the scattered tribes of the Volga, the Voguls, and the Ostiaks, the Hungarians (the affinity of whose language to the Finnic was long ago suspected, but only proved seventy years ago, see M. Müller, *Survey of Languages*, pp. 99—119), the Turks (whose language, Turanian in its basis, is largely intermixed with Persian and Arabic), and lastly the Basques of the Pyrenees. That strange language, the riddle of philology, is the most isolated in the world. As far as grammar and phonetic laws are concerned, it stands nearest to the Ugrian, the class to which the Hungarian belongs: there is no doubt that it once occupied a much larger area than now; though there is no evidence to shew that Europe was once occupied by a homogeneous population of which the Finns were the northern and the Basques the south-western extremes (see Latham, *Elements of Comparative Philology*, p. 677). Professor Huxley (in a lecture reported in the *Pall Mall Gazette*, Jan. 10, 1870) started a novel theory. Relying on the facts that the Kelts are universally described by Roman and Greek as a tall, blue-eyed, fair-skinned people, whilst a dark-skinned black-eyed race now exists in England, Ireland, and France, side by side with the lighter race, the dark predominating in each country in the S. and W., the light in the N. and E.; and that Caesar states the language spoken by the Aquitani (S. of the Garonne) was not Keltic; he concludes that this language was the Basque, that the people speaking this language were the primitive inhabitants of the S. of France, Spain (Iberi), and Sicily: that this people has been everywhere broken up by the Kelts; that the Keltic language has everywhere prevailed, but that the Iberian blood has remained unchanged in proportion; (he relies here on the analogy of Cornwall and the universal spread of the English language there;) and that this Iberian blood is the origin of the so-called black Kelts both in Ireland and England.

This hypothesis is bold and ingenious. I do not agree with it, because I do not believe, as Professor Huxley does, that a language ever yet died out without leaving some trace of itself at least in local names. In Cornwall, the Keltic language has completely died out in ordinary use, but that Cornwall was originally occupied by a Keltic population is shewn as clearly by the names of places, as it would be if not a word of English had ever been spoken there. And this is true of parts of England where the Keltic language has been extinct for centuries, e.g. in East Anglia, where the Keltic river-names, Ouse, Rhee, perhaps Cam, &c. remain. But what trace is there of an element akin to the Basque in the names of places in England and Ireland? Nay, if the admixture of races was not before all historic time, there ought to be left some trace of the Basque element even in the words of our ordinary speech: for there are fairly numerous traces of the Keltic there.

Lastly what linguistic proof is there of the connection between the Basques and the Iberi?

CHAPTER III.

ROOTS AND SUFFIXES.

What is a "root"?

important to know clearly what we mean by this a "root." I think that it is often supposed when ay, for example, that DA is a root meaning to give, a root meaning to go; that in arriving at these roots ave arrived at some ultimate facts from which to back and explain the whole constitution of language; in fact it is a law of nature that DA must mean to I must mean to go. Now in the first place we carefully remember that it is only for the Indo-Eu- n family that DA means to give. It is not so for vhole human race. So if there were some inherent ssity that DA should mean "to give," that necessity d exist only for one family of mankind—confessedly nost important family—but still only one out of the n race. If indeed this fact were universally true, all hilological inquiries would have been but steps in the iry into the origin of language as a whole. But it is possible to examine the relation of a Greek word to Greek words, or to cognate words in Sanskrit and ic and Latin, without being involved in the question her the so-called Bow-wow and Pooh-pooh theories rue or not. That all language did originally spring imitational and interjectional sounds *combined*—not one or the other separately as has been implied times—I for one firmly believe, not seeing any other ble origin for language. But the furthest and earliest to which the history of the Indo-European language e traced does not come any way near to that really primeval time. The tolerably developed vowel system of the Indo-European language, its power of expressing modifications of idea by change of vowels, and the extent to which this method has superseded the older and simpler method of reduplication; the general lightness and flexibility of its roots; its inflectional system already suffering from decay; these and many other facts may give some idea of the lapse of time which must have separated the earliest historically traceable stage of the language of Europe from those first beginnings of all speech. And the more clearly we understand this, the less shall we be inclined to admit any *necessary* connection of sound and sense even in the Indo-European roots. What probability is there that any analysis can give us the ultimate form of those roots? Is it not, on the other hand, certain that in all that vast prehistoric time they must have been undergoing changes analogous to those we find during those ages in which we can trace their development? If, then, we cannot know with certainty their ultimate form, of what scientific use can speculations be upon the connection between them and the ideas they express? That there was some connection originally I believe; but I do not believe that it is ever discoverable with certainty: and that it was ever necessary, I deny. Mr Farrar[1] mentions the frequent occurrence of the combination *st* to express stability. Undoubtedly the root *sta* and extensions of it—*stav, star, stambh,* &c.—are found in all the Indo-European languages. He proceeds: "There must have been some reason for this; and we believe it to be furnished by the simple instinctive Lautgeberde—*st!* a sound peculiarly well adapted to demand attention (compare *whist! usht,* &c.), and therefore well adapted to express stopping and standing as the immediate results of an awakened attention." Very possible: but how is it to be proved? How do we know that *sta* is the ultimate form of the root? It would be quite in analogy with the deve-

Connection between roots and ideas.

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[1] *Chapters on Language,* c. 18, p. 202.

lopment of other roots (e.g. *gan*, *gnâ*) that a more original form was *sat:* in which case the explanation does not seem so probable. It is essentially a guess and incapable of verification. On this question of the connection between idea and form, I adopt unhesitatingly Renan's view[1], "La liaison du sens et du mot n'est jamais nécessaire, jamais arbitraire, toujours elle est motivée." The force of the latter part of this maxim will, I hope, appear more fully in the course of this work.

Definition of a root.

What then do I hold about roots? I accept Prof. Curtius' definition, although I do not agree with all his views respecting them: "A root[2] is that combination of sounds which remains when a word is stripped of everything formative." Further on, he excludes such combinations as have suffered from chance, sporadic, variation. For example, take the word γίγνομαι. Here strip off the reduplication γι, the termination μαι, and the connecting vowel ο, we have left γν, an unpronounceable result. But the true Greek root γεν is preserved for us in γένος, &c., the ε having been lost in the verb in the striving for lightness of sound, a tendency which we shall see has had so wide effect on language as to be entitled to the name of a law. A root then to me is simply an abstraction[3], a convenient heading under which to class different words belonging to the same family, a help when we wish to investigate their affinities to each other, or their relation to words of another family, or again of another language. For these are the only proper objects of Comparative Philology, at least in its present stage: and they are quite enough to occupy philologists for many years to come, instead of investigating problems for the solution of which there are not yet—perhaps never will be—sufficient data.

Each language has its own roots.

From this point of view we can speak of a Greek, or a Sanskrit, root as well as of an Indo-European root—not implying that it is the simplest form traceable, but the simplest in that language. Thus I spoke above of the "Greek root γεν," and this is the oldest distinctive Greek form. But ε is never an original vowel of any root in any Indo-European language, and comparison with the Sanskrit *jan*, with a knowledge of the phonetic changes found in each language, leads us to the original Indo-European *gan*, the oldest traceable form. Still for Greek philology it is convenient and permissible to speak of the root γεν. I confess that I do not like the metaphor; it seems to me to imply too much, almost some power of growth inherent in the "root." But the term has become so established that it is hopeless to think of changing it; and no harm can be done so long as we know clearly what we mean when we use it—that we are only employing a label (as it were) to distinguish a number of phenomena; not thereby giving any explanation of them[1].

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[1] *De l'Origine du langage*, p. 148.

[2] *Gr. Et.* p. 45.

[3] See however M. Müller, II. 84, &c.

This application of the term root to the ultimate forms of particular languages may also be justified for the sake of clearness; since, if we refer all Greek roots back to their presumably original Indo-European form, we shall confuse, as Professor Curtius has pointed out, roots the most dissimilar. Thus there is a Greek √γαρ = to call, found in γῆρυς; another √γρε = to awaken; and another √γερ = to be old, in γέρων. All these Greek roots may be traced back to the simpler form GAR, which is attested both by the laws of phonetic change, to be hereafter stated, and by the occurrence of derivatives in all these senses in the sister languages: thus GAR appears in the sense of "chattering" in *garrire*, where custom and use have given the word a slightly different sense from that of γηρύειν; the same form must underlie the anomalous Sanskrit √*jâgṛi* = to wake, which is only √*gar* irregularly reduplicated and then weakened; thirdly, it appears in the Sanskrit *jaras*, "old age," with only the weakening of *g* to *j* common in Sanskrit. If therefore we wish to trace the words belonging to these three classes back in every case to the presumably earliest form, we should be justified in saying that the simplest traceable form in each case is GAR. But what do we gain by this? It is much better for Greek philology to retain the three distinct forms, than to speak of three distinct roots by one form. Indeed it is to my mind most probable that at a still earlier but prehistoric period, all three roots were distinct in form; and that each afterwards passed into the form GAR by regular processes of mechanical change.

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[1] Cf. Farrar, *Chapters on Language*, p. 97.

Secondary roots;

We sometimes find two roots slightly differing in form but of the same meaning, or such that the meaning of one is obviously deducible from the meaning of the other. Thus we have (occurring in Sanskrit) a √*yu*, to join, and another √*yuj* with the same meaning: this second root must be corrupted from YUG, whence *iugum* and *ζυγόν*. Between these two roots there is not the slightest difference of meaning, only of sound. Again, there is another root YUDH meaning in Sanskrit "to fight," found in the Homeric *ὑσμίνη* for *γυδ-μινη*, which seems originally to have meant to "join battle," just as in the phrases "miscere pugnam," "conserere manus," &c. If so, YUDH is YU limited in its use, to join, but only to join in a particular way.

Now it is only reasonable to assume some connection here; to suppose that one of these forms is original, and the other derived from it: and the most probable supposition is that the simplest form is commonly the earliest. It is convenient to mark this distinction and therefore YU is called a *primary* root: while YUG and YUDH are *secondary* roots. We may define a secondary root as a modification of a primary one—commonly to express some extension or limitation of the idea—by the addition of a letter or letters, commonly at the end of the original root.

formed by adding initial letters (?),

Cases where the letter is added at the beginning of a root are rare and indeed not very certain: that is, we cannot be sure whether the apparently primary is not a weakened form of the secondary[1]: e.g. we do not know which is older, *√scalp* in *scalpo*, *σκόλοψ*, or *√glab* in *glaber*, *γλαφυρός*: the two roots differ slightly both in form and meaning, and yet can apparently be referred to a common source; but which is the older cannot be told with certainty.

by vowel-change,

Sometimes although no addition be made, the form of a root can be modified by internal vowel-change. In this case we get another class of secondary roots. Thus, for example, there is a root TAR, expressing motion with friction: from this in its simplest form we get *τείρω* and *τέρην*, *tero*, &c. From the vocalic nature of *r*, any root in which it occurs can take it either before or after the vowel: hence we get TRA = TAR—not secondary: but this *a* can be modified into *i* and *u*, and then we get distinct secondary roots TRI and TRU: the first is found in *triticum;* the second in *τρύω*, &c. In neither of these is there any variation of sense: but from them, with the simple root, a large number of secondaries of the more common kind can be produced. Thus from TAR we get TARK apparently with the sense of whirling round in *torqueo, torques*, &c.; and in Greek *ἀτρεκής*, "that which is not turned or twisted," and so "true;" also *ἄτρακτος* "the straight," whether arrow or spindle: and—so closely akin in meaning that one must suppose the *p* to have arisen by labialism from *k*—*τρέπω* and *trepidus*, "turning round," whether in eagerness or fear. We have next TRAM, whence *τρέμω* and *tremo*, shewing the same sense as the last: and TRAS whence *τρέω* (i.e. *τρεσ-ω*) and *τρηρός* (i.e. *τρεσ-ερο-ς*) whence *τρήρων*, the timid bird, always used of the pigeon, and *terreo* (for *ters-eo*): and TRAN, whence *τιτραίνω* and *τόρνος*, where more of the original meaning is seen, and *τρανής*, apparently "bored right through," "clear," "distinct." Then from TRI we get TRIB in *τρίβω* and *tribula* a threshing-machine, whence the ecclesiastical metaphor of *tribulatio:* whilst from TRU we have TRUP in *τρύπανον* a

and especially by adding consonants at the end of the root.

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[1] See *Gr. Et.* p. 58.

borer, and *τρύπαω*, and TRUGH in *τρύχω* to wear out. It is observable that the secondaries of these modified forms keep throughout closer to the meaning of the primary root than its own secondaries do.

Origin of these secondary roots.

There has been much speculation upon the origin of these secondary roots. It is not necessary that the new element should always have been dynamic. It may have been sometimes originally phonetic: this agrees with the fact that a change of meaning is not always conveyed by it. But even if phonetic in its origin, it could be used dynamically: just as the phonetic variations of *a*—*a, e, o*—were employed, as has been already pointed out. The probability of a phonetic origin is greatest where the new element was nasal. Beside the root GA (= to produce), there existed in Indo-European days a root GAN, with the same sense: MA was expanded into MAN; perhaps the simpler form retained generally more of the simple signification of "measuring," while the latter expressed the abstract idea, needed even in those days, of "thinking." Similarly in Sanskrit HA (= to kill) was expanded to √*han* with the same sense: and if the Greek √*φεν* in *πέ-φ(ε)ν-ω* be the same root, the secondary form must also be ascribed to ancient times. The development of BHA (= to shine) into BHAN is found also in Sanskrit and Greek; the new root is well employed but with a curious difference by the two peoples. While the Greeks used the simple root chiefly in the sense of making clear by language, i.e. of speaking, in *φαμί, φήμη*[1], they employed the secondary root to give the original sense, as *φαίνω, φανή* = a torch: the Hindus on the contrary kept the primary sense to the primary root; while √*bhan* appears in the Vedas = to praise. Now this *n*, since it did not in the majority of cases modify the original idea, may very well have been phonetic in its origin, something like the ν ἐφελκυστικόν; or perhaps it nasalises the previous vowel, like the nasal vowels commonly heard in France[1]. But this explanation will not suit all these "determinatives" as Mr Ferrar well calls them[2]: final *k*, or *t* or *d* must be accounted for otherwise. A very ingenious hypothesis of Prof. Pott's is that these secondary roots are combinations of two simple roots: thus ἐσ-θ-ίω is from two distinct roots: √εδ and √θε = eat-put; the Sanskrit √*yudh* being similarly from √*yu* and √*dha*[3]. From this same DHA to place, Pott would compound the Latin *ten-do* (from √*ten*)—not improbably. No one doubts that *ab-do, condo,* &c. are from this root, whose primary meaning was obscured in Latin: it may therefore have come to be regarded as merely a formative element, and employed even in cases like *tendo,* where the combination is no longer etymologically appropriate. This hypothesis however as well as the first seems hardly adequate for the whole set of determinatives; it is not easy to see what the roots could have been with sense sufficiently vague to supply them all. But it will undoubtedly account for some. Lastly it has been supposed that these letters are "pronominal roots," the nature of which will be explained immediately. Here again we seem to have a satisfactory explanation for those letters which are identical with known pronominal roots, but not for the others. It is by far the most likely that all these methods were in use, and probably others which have not yet been detected.

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[1] The apparent exception *φάος* is probably to be referred to another secondary root *φαϜ*, which is found in the Pindaric *ὑπόφαυτις* (*Pyth.* 2. 76), and *ὑπόφαυσις* (Herod. VII. 36); the former word having the derived, the latter the primary meaning.

Secondary roots formed with a final vowel.

There are a few secondary roots in which the new final element is a vowel. Such are GNĀ (*gno-sco*) by the side of GAN (*gen-us*) and MNĀ by MAN: and we have many such double roots in Greek, e.g. √ταλ and √τλᾱ, √δαμ and √δμᾱ, with no difference in meaning; but there is a very decidedly derived sense perceptible in the first two mentioned. Prof. Benfey believes that the final *ā* was produced by the accent falling upon the connecting vowel between the root and the verbal suffix, e.g. *gan-ā-mi*, which forced out the radical vowel, and formed thereby a practically new verb ready to bear a different sense. I think this very probable. Still the fact that the radical vowel is lost in each case undoubtedly supports Schleicher's law of the convertibility of position of the radical vowel, e.g. that a root AK implies also a by-form KA, the vowel being able to be sounded before or after the last consonant at pleasure. The new root form could then be taken if wanted, to express a new idea (as GNĀ): where no such want was felt, the two roots were used indifferently. I think that this law should be at least restricted to cases where the consonant moved is a liquid or nasal: there is then a reason for it, the exceedingly vocal nature of the sound: whilst I can see nothing to account for such a change as AK to KA[1]. But even if it were so restricted, the law would cover all the distinctly secondary roots so formed. On this hypothesis then GNĀ does not differ in its origin from TRA, TRI, TRU mentioned above; they may have suffered the vowel to be weakened afterwards: it would therefore not need to be classed separately. It is to be observed that, in any case, the vowel is produced by phonetic, not by dynamic, causes.

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[1] See next Chapter.

[2] See numerous examples in his *Comp. Gram.* Vol. I. p. 189.

[3] See *G. E.* p. 67.

Pronominal roots.

I have spoken above of a "pronominal root," as of something distinct from the roots hitherto considered. Those roots are sufficient to explain all verbs and all nouns: not that we can always for every verb and noun lay our hands on the actual root: but we do know the roots of so much the larger number of them, that we infer by analogy that the others really have similar roots, though we may not be able to find them. Now by these roots is expressed a possibility of action: the verbs formed from them denote the action itself, the nouns denote a person, thing, or state, existent or conceivable, concerned in or resulting from that action. In all these the connection of each derivative with the root is more or less distinct. DA expresses potential giving: δίδωμι and *do*, I actually give; δοτήρ and *dator* are the giver; *donum* is the thing given; δόσις is the state of giving. There is no doubt that all these are to be referred to one idea, expressed by a particular root: and though some nouns cannot be accounted for so clearly, we do not doubt that there is some root under which they also could be classified. But what are we to say to the pronouns (as they are called)? or to particles in general? We can take *is, ea, id*, &c. or *mei, mihi* and the other cases of the first pronoun, except the nominative, and get to an ultimate form, *i* in one case and *ma* in the other. But these are not at all like *da* above: they denote no action, to which their derivatives can be reasonably and intelligibly referred. No doubt there is a root I, which denotes "going," and another, MA, which expresses "measuring:" and the pronouns have actually been referred to these: but there is no satisfactory connection of meaning[1].

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[1] See on this point Prof. Benfey in *Gött. Gel. Anzeige* for 1865, p. 1376.

They denote relation in space.

Pronouns are *general*, for they are terms convertible not with a particular person or thing, but with many persons and things: and they are in most cases *relative*, because they denote some relation either to the speaker, or the person or thing spoken of, or between the two. It is obvious that no root denoting action, however unrestricted, is sufficient here. Now the simplest way in which I can conceive of relation between myself and some object is that I am here and it is there; that there is a certain space between us; and this or some such conception is absolutely necessary to connect together the objects for which ordinary roots have given us names. Accordingly it is suggested, with great probability, that pronouns and pronominal particles (i.e. conjunctions and some adverbs and prepositions) are formed immediately from sound (primarily interjectional) by which the speaker first expressed that this thing was near to him, and that thing farther away: and afterwards by adding them together expressed motion from the one to the other. These may be called roots as well as those of which we have already spoken; and if we believe that all roots whatever were originally interjectional, we must hold that their origin is the same: but their use is so different that it is well to have different terms for them[1]. It is not pretended that we can say with any certainty which of these originally denoted "here" and which "there." Different people differ immensely as to the impressions a particular sound is calculated to convey: and here the senses assigned are so very general that it is quite conceivable that the same sound might be taken for either. Therefore, as before I refrained from speculation about the original sense of the common roots, so here also I refrain; and only assert that there is a class of roots, probably distinct in character from the others, and which in practice at least should certainly be kept distinct.

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[1] The objection to this theory that roots are *special*, and pronouns *general*, is not conclusive, for though it is undoubtedly true that most roots were originally special, i.e. denoting not merely "going," for example, but going in some special way, yet it cannot be shewn that *all* roots were so restricted: this one, I, seems to have been always used of *going, generally*.

Bases—intermediate between roots and words.

We have now seen the different kinds of roots. But there is an intermediate stage—sometimes more than one—between roots and words. I have said before that a root gave expression for potentiality; we want now something

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[1] The principal roots of this class in the Indo-European were
a whence probably the augment, which is *a* in Sanskrit, and perhaps
e-go, *ἀ-σμε-ς* (*ἡμεῖς*), &c.
i in *i-d*, *i-ta*, *i-pse*, *οὑτοσ-ί* (perhaps), &c.
ka in *quod*, Ionic *κῶς*, *κοτέ*, &c., *hi-c(e)*, *ho(d)-c(e)*, (c)*ubi*, *ali-cu-bi*, &c.
ta in *τό*, *οὗ-το-ς*, *is-te*, &c.
sa in *ὁ*, old Latin *so-s* (he) *sa* (she) *i-s(e)-te*, *si-c(e)*. .
na in *νώ*, *nos*, *ne*, *num*, &c.
ma in *μο-υ*, *me-i*, *μή*, &c.
ya in *ὅς*, *ὧς*, *ia-m*, &c.
va in *uos*, *αὖ* (?)
See Leo Meyer I. 323, Ferrar, I. 186.

Formative suffixes; verbal suffixes, nominal suffixes. Denominative or nominal verbs.

to denote action, the simple idea not yet modified by the consideration of the actor or the person acted upon; and something to denote a thing or state, not yet in relation to any other thing or person, but the bare idea of the thing. This is the "base" or "stem," which is the root with the addition of a "formative suffix." The two terms are commonly used indifferently, but it would be well to distinguish them, and to speak here of a base only. A base may be either "verbal" or "nominal," according as a verb or a noun is to be formed from it: and the same distinction may be applied to the suffixes. The verbal suffixes are principally *-ya* or *-aya:* whence we get the bases of all the contracted verbs in Greek; thus *τιμάω* = *τιμ-aya-o(μι)*, &c., and of the Latin first, second, and fourth conjugations, as *amo* = *amāo* = *am-aya-o, moneo* = *mon-eya-o, audio* = *aud-iya-o.* The nominal suffixes are much more numerous; the following list for the Indo-European is given by Schleicher—*a, i, u, ya, va, vant, ma, mant, ra, ana, an, na, ni, ta, to, tra, ti, tu, dhi, as, ka, yans.* Sometimes two suffixes are found together; they may then be distinguished as primary and secondary suffixes, e.g. *ta* + *ya* (in Greek *πρακ-τεο-*), *ma* + *na* (Greek *ἱε-μενο-*, Lat. *ter-mino-*), *ta* + *na* (Gr. *ἐπηε-τανο*, Lat. *cras-tino*), *ta* + *ra* (Gr. *προ-τερο-*), *ta* + *ma* (Lat. *op-tumo*), *ma* + *ta* (Gr. *πυ-ματο-*), *ta* + *ta* (Gr. *ὑσ-τατο-*); and the bases so formed as secondary bases. Not unfrequently however the simple root is employed without undergoing the change into a base: thus *dux* is only the root *duc,* with the *s* of the nominative, *φα-μι* (Att. *φημί*) is nothing but the root with the suffix of the first person. But much more commonly a formative suffix intervenes. Very frequently a nominal base is used to form a verb as well as a noun; e.g. *κορύσσω* is formed from *κορυθ* the nominal base of *κόρυς*; the Latin *acu-o* is from *acu(s)* a needle. Such verbs are called denominative or (better) nominal verbs.

There is a considerable number of verbal suffixes which are certainly formative, and generally classified with

Stem-suffixes.

those above mentioned: yet they differ from them in use so far as to make a separate name desirable, even though their origin is probably the same. The formative suffixes which we have mentioned are practically equivalent to determinatives: they are found in all the tenses of a verb: but these of which I am now speaking are found only in the present and kindred tenses, and so are always felt to be separable. They are commonly called "conjugational" or "stem-suffixes:" the latter name is preferable[1]. I doubt whether Schleicher be right in including among these suffixes *a*, which is found as *ε* and *ο* in *φέρ-ε-τε* and *φέρ-ο-μεν*, as *i* and *u* in *ueh-i-tis*, and *ueh-u-nt*: this seems to me to be more probably a mere connecting vowel which binds together the root and the personal suffixes, so as to avoid the combination of too many consonants. But to this class belong *na*, in *σκίδ-να-μαι*, *li-no*, *sper-no*, &c.; and *nu* found in *στορ-έν-νυ-μι*, &c., but not in Latin. Then comes the suffix *ya*, a very Proteus in Greek; appearing as *ι*, in *ἰδ-ί-ω*, in *κα-ί-ω* and *δα-ί-ω*, sometimes out of place as *φα-ί-ν-ω*, *τε-ί-ν-ω*, *ἀ-ί-ρ-ω*, *πε-ί-ρ-ω* where the *y* originally followed the *ν* and *ρ*; as *ε* in *δοκ-έ-ω*, *γαμ-έ-ω*, *ὠθ-έ-ω*, *κυρ-έ-ω*, &c., verbs which in the present stem are undistinguishable from those formed with *aya*, but distinguished by the restriction of the suffix to that stem: sometimes it passes by assimilation into a consonantal group: into λλ in *βάλλω* (for *βαλ-yω*), *στέλλω*, &c. as *σσ* (*ττ*) in *φρίσσω*, *πτήσσω*, *λίσσομαι*, *ἐρέσσω*, &c., whose history will become more intelligible when described under consonantal change in Greek; and lastly as *ζ* in *κράζω*, *ῥέζω*, *ὄζω*, &c. In Latin the same suffix is more recognisable in the *i-* verbs of the 3rd (primitive) class: as *cap-i-o*, *iac-i-o*, *fod-i-o*, &c.: some have passed by analogy into the 4th class, e.g. *mug-i-o*, *rug-i-o*, &c. Probably we find assimilation in *pel-l-o*, *cur-r-o*, *mit-t-o*, &c.: though

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[1] The nature and object of the "present-stem" will be considered in the chapter upon Dynamic Change. The verbal-suffixes already mentioned might then be distinguished from these as "base-suffixes;" these two kinds making up the list of formative verbal-suffixes.

Curtius thinks not. Next comes *ska*, in *βό-σκ-ω*, *gno-sc-o*, a well-known suffix: and lastly one, not Indo-European, but found in both Greek and Latin, *ta*, in *τύπ-τ-ω*, *ἀν-ύ-τ-ω*, and *pec-t-o*, *flec-t-o*, &c.

What were these suffixes originally?

I have said that these stem-suffixes probably did not differ in origin from the formatives, *ya* and *aya:* and the question naturally arises, what were all these suffixes—verbal and nominal—in the beginning?

Clearly no certain answer can be given: but the number of suffixes is sufficiently great, and sufficiently different in their use, to enable us to compare them together in different ways, and so speculate with some degree of probability. It would seem that they must have been either verbal or pronominal roots, since all the rough material of speech divides itself into one of these two classes. If pronominal, they must have been quite general, modifying the root at first in the slightest possible way, and only restricted afterwards to special significations: if verbal, they were at least more special, and directly limited the application of the root from the very beginning. To begin with verbal suffixes—*sk* has more the look of a common than a pronominal root. Corssen thinks it may have been a corruption of SAK—the Latin *sequ-or*, *sec-undus*—so that *βό-σκ-ω* should mean "I go after feeding." That "to go" can be used with another root as a mere auxiliary is clear from our own periphrastic English future "I am going to tell:" we may compare[1] "je vais dire" with the same meaning: and then for the amalgamation we have the analogy of *j'aimer-ai* and *ama-bo*. Similarly *ya* and the base-suffix *a-ya* may be connected with YA, a secondary root formed from I "to go:" this would support and be supported by the hypothesis that the modal-suffix[2] *ya* (*sim*, old form *siem* = (*e*)*s-yā-m*(*i*), *εἴην* = *ἐ*(*σ*)*-ιη-ν* = *ἐσ-yā-μι*) had originally the same meaning. I do not know any common root to which *na* and *nu* can be referred on any probable analogy: they have rather a pro-

Probably the verbal were in the main common roots.

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[1] With Max Müller, I. 218.

[2] See page 53.

The nominal were in the main pronominal roots.

nominal look. The pronominal character is still more apparent if we pass from verbal to nominal suffixes. In form these generally coincide with known pronominal roots. And their use points in the same direction. I have said that, if pronominal, they must have been suffixed at first to modify the root in a general way. Consequently a great many different suffixes would at first be applied vaguely to denote the same indefinite idea; as a rule only one, the best fitted, would survive with a tolerably definite sense; sometimes however more than one would remain. On the other hand, the original vagueness would make it easy for the same suffix to be applied to more than one idea. In a word, we should expect to find two results existing side by side; more than one suffix to denote one idea, one suffix to denote more than one idea. And this, I think, we do find, down to a comparatively very late period. An instance will be found in the use of the suffixes *ta* and *ma* and their combinations by the Greeks and Latins, we find *ta*, in πρω-το, κακισ-το, *quarto; ma* in ἑβδο-μο, *pri-mo, infi-mo; ta + ta* in ὑσ-τατο; *ta + ma* in *op-tumo; ma + ta* in πυ-ματο. That is to say, in the two languages the same suffix is used to denote both a superlative and an ordinal; each of the two suffixes denotes either, and the two are combined indifferently to denote a superlative. The vagueness of meaning therefore survived till Graeco-Italian times at least: we should be justified in saying even after the separation by the two separate forms *-tumo* and *ματο*, each occurring, I think, only in one language. This loose applicability of the suffixes, felt down to late times, and the fact that the forms agree, are two arguments which seem to me fairly strong for the pronominal origin of most nominal suffixes. I say "most," because for some a verbal origin is clearly possible: such are *tar* (δο-τερ, *dator*) which commonly denotes action, though here it may be said on the other side that this sense is not always obvious (as in *pater*, &c.); and *dhi*, which is found in the Greek infinitive *-θαι*, the locative of a nominal base, and may be from DHA "to place." So in conclusion I think that of verbal suffixes the majority are probably formed from common roots, though a few may be pronominal; and of nominal suffixes the majority are pronominal, but a few may be from common roots.

We have seen that sometimes more than one nominal suffix is used. Thus *ἀληθες* is formed from λαθ by the suffix ες (*as*): and from this again by the suffix *ya* is formed *ἀληθες*-ya or *ἀληθεια*. So in Latin *contio* is *co-ven-ti-on*, where we have two suffixes: and the number is increased to five in *contionabundo-*.

Are the fuller or the shorter forms of the suffixes the older?

It is a disputed point whether some apparent combinations of suffixes are not themselves the older forms, from which the simpler and shorter forms have been degraded. Thus, for example, it is commonly held (by Curtius and Schleicher amongst others) that *ma, ta, na,* are the older forms from which longer ones, *man, mat,* have been compounded. Professor Benfey on the contrary would postulate a prior form *mant,* from which came, by different weakenings, *man,* and *mat,* and lastly *ma:* we may compare for *mant* the closely analogous *vant,* found e.g. in *χαρι-Ϝεντ*. From these participial terminations *mant, vant, ant,* by far the greater body of nouns could be derived by phonetic changes for which there is sufficient analogy: from *vant* would come *van, vat, vin:* from *ant* come *an, in, a, i, u,* or this last series might come directly from *vant.* Thus nearly all nouns would be participles of verbs. The difficulty of this theory is to conceive how these *mant* and *vant* first arose. I can imagine no way except by combination on the ordinary theory. Still I believe that in many cases Prof. Benfey is right—that the shorter forms, as we now have them, rose from corruption of fuller ones. Thus we find in Sanskrit *nāman* for *gnā-man* a "name," Latin *nomen,* Gothic *namin:* from these we infer the suffix *man.* But in Greek we find *ὀ-νο-ματ*—the *τ* of course disappearing in the nominative, so that *μα* only is left. Now either *n* passed into *t* in Greek, which is in the highest degree improbable: or the

Greeks used a different suffix, which is possible, but from the antiquity of the form in *-man* (shewn by its wide spread) and the preference of the Greeks for final *n*, is unlikely; or the two forms must be referred to a fuller form *gnā-mant:* which I think most likely.

Inflexional suffixes not to be described here.

I think I have now touched upon all points connected with formative suffixes. We have got nominal bases ready to be turned into actual nouns by "case suffixes." We have got verbal bases, or verb-stems, or sometimes the simple root, which in this connection may be called a base, ready to become actual verbs by the addition of "modal suffixes" (*a* or *ya* for the subjunctive and optative respectively); of "tense suffixes" (as *sya* for the future, *sa* for the compound aorist, *a* for the perfect, &c.); and lastly of "personal suffixes" (*mi*, *si*, *ti*, or the further corruptions of these). All these four kinds are "inflexional suffixes," and their history does not properly come into the province of special etymology. Their use belongs to grammar: their origin can indeed be guessed at by the comparative etymologer, as indeed it has been by the founder of the science, Franz Bopp. But these original forms can only be recovered by comparison of many more languages than I propose to deal with. Also they afford less real material for speculation than even the formative suffixes. They are practically much fewer: each one in each language, however often it may occur, is really only a single specimen, not a member of a class which can be compared with other members. Their original meaning is still more difficult to determine with any certainty; because there is really no limit to the number of formations, any one of which would be sufficient to express these extremely general conceptions. For convenience of the student however I will give a table at the end of the volume containing the Greek and Latin variations of the case suffixes[1].

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[1] Full information containing all the theories on this subject may be found in Schleicher's excellent *Compendium*, II. 13, "Wortbildung," §§ 244—308; and (so far as the nouns and pronouns are concerned) in Ferrar's *Comp. Grammar*, I. 199—end. Curtius' *Tempora und modi* is a most suggestive book for the verbs.

CHAPTER IV.

SOUNDS.

The sounds of the original language.

IT may be regarded as certainly ascertained that at a time not long before the first great separation of the Indo-European family, their alphabet contained fifteen or sixteen consonants, and three vowels. The consonants are best arranged thus: nine momentary, and six or seven protracted sounds—the terms will be explained shortly. The nine momentary sounds contain 3 hards—K, T, P; 3 softs—G, D, B; and three aspirates—GH, DH, BH[1]. The protracted sounds comprise the nasals, N and M; the three spirants Y, S, V, and the liquid R, and perhaps also L: this is the sixteenth letter.

Extension of the vowels.

In vowels, we find three simple sounds, A, I, U. But in order to express some modification of the idea our forefathers even before their separation had learnt to vary the simple *a*, *i*, *u* of a root by an addition of vowel sound. By uttering a new *a* before sounding the radical vowel of a word, instead of original *a* they had $a+a$, or $\bar{a}$: instead of *i*, $a+i$ or *ai*: instead of *u*, $a+u$ or *au*. Repeating the process they had $a+\bar{a}=\bar{a}$ again; $a+ai=\bar{a}i$; $a+au=\bar{a}u$. They had thus a double modification of each vowel on an ascending scale—

$$\begin{array}{lll} a, & a+a=\bar{a}, & a+\bar{a}=\bar{a}, \\ i, & a+i=ai, & a+ai=\bar{a}i, \\ u, & a+u=au, & a+au=\bar{a}u^{2}. \end{array}$$

It is quite true that these graduated vowel-scales are not found in any one Indo-European language in the exact forms here given. But this principle of vowel-modification is so certainly traceable in so many of the derived languages, that we may with absolute certainty refer it back to their common parent: and the special phonetic laws of the several languages prove with equal certainty that the different forms in which these scales are found can be referred to the forms given above as the common original of all, and to no others. Some few of these different forms will be mentioned in the section upon vowel-intensification in Chapter VI (Dynamic Change).

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[1] It is quite possible that these three sounds may be later than the rest; it is probable from their greater complexity and difficulty of utterance. But at all events they are older than the separation.

[2] Schleicher, *Comp.* p. 11.

This increase of sound was qualitative, not quantitative.

It might have been expected that just as *a* was intensified into *ā*, so also *i* and *u* should have been raised to *ī* and *ū*, as their regular method of increase. Indeed instances might be brought forward from the Greek of this lengthening, e.g. *τρῑβω* from √*τρῐβ*, *λῡω* from √*λῠ*: some lengthenings apparently of the same kind in the Latin are not really in point, e.g. *fīdo* from √*fĭd*, *dūco* from √*dŭc*, for these are weakenings from *feido* and *douco* respectively, as is proved by inscriptions; but sufficient examples from Latin can be given, and there seems no ground for denying that the Greek modifications, like those mentioned above, are genuine examples of vowel-intensification. But the method is not sufficiently universal in the derived languages to prove that it was in use in the parent speech. Schleicher[1] indeed argues that *ī* and *ū* were unknown to the Indo-Europeans: and strange though this seems, it would certainly be difficult to prove their occurrence by such strict proof as sound philology requires. The strongest argument in their favour is perhaps their constant occurrence in Sanskrit roots: but even these, as Schleicher points out, are mostly lengthened forms of simpler roots and peculiar developments of Sanskrit, the simpler form being in many cases found in the cognate language, e.g. "to be" is in Sanskrit √*bhū*, but in Greek √*φῠ*, Latin √*fŭ*, so that it cannot be doubted that BHŬ was the primitive form. At all events, even if this ever were the regular method of intensification in Indo-European speech, it was in the main superseded before the earliest sundering of the languages by the more refined method mentioned above, which may be called *qualitative*, as distinguished from mere *quantitative* increase. Such a thorough loss of a simple early linguistic process, and such a complete establishment of a later and more subtle one, seems to me one proof amongst many of the distance at which Indo-European speech as traceable in its earliest form lies from the primitive speech of the human race, and of the consequent uncertainty of all speculations which treat roots as *absolutely* ultimate forms, and then seek to explain them on physiological grounds.

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[1] *Beiträge zur Vergleichenden Sprachforschung*, I. 331.

Scantiness of this alphabet.

It will be seen at once that the Indo-European people did not possess nearly all the sounds which are heard upon the lips of their descendants in different parts of Europe and Asia: whilst their three aspirates have been in Europe everywhere supplanted. It is not surprising that this old alphabet should be less rich than those of more civilised nations: the development of ideas and feelings establishes in language new sounds, by finding a use for them, although it does not produce them. But it possessed all the more clearly marked vowel-positions and all the most important consonantal articulations. The greater wealth of modern times has grown from corruptions of the simpler original.

Fuller list of sounds to be now considered.

I propose to examine very briefly the nature of all the more familiar sounds we now hear in England, with some of those heard in France, Italy and Germany. This may seem a superfluous labour; but it is not so. Some of these sounds, though not occurring in the original language, probably were heard in the Greek and Latin which we have to consider; it is better therefore to give a list of modern sounds, which is tolerably full, though it does not at all pretend to be exhaustive. We may thus get a better idea of the completeness or incompleteness of the

Indo-European alphabet, and understand better its changes into Greek and Italian, and may lay a basis for any further investigation of the changes from Itálian to the Romance languages[1].

Physiological difference between vowels and consonants.

The old division of sounds into vowels and consonants has been much objected to[2], and with considerable reason, if it is taken to imply the absence of affinities between vowels and consonants. But it will be retained, both for its convenience and because there is a real difference in their formation. This has been well shewn by Mr Melville Bell. When the voice in its passage through the mouth is not further modified by contact, partial or complete, of the lips or tongue, but flows through an open channel without any friction or hissing, then we have *vowel* sound. When on the other hand the sound is not complete until the action of some part of the organs of the mouth has ceased, then we have produced what we may call *consonantal* sound. Briefly, "a vowel is the result of an open *position* of the oral organs; an articulation (this is Mr Bell's term for consonant) is the result of an opening *action* of the organ[3]." Thus the so-called "semivowel" *w* seems to differ infinitesimally from *u*, and linguists have often argued to what class, consonant or vowel, it should belong. But its consonantal character is quite clear by the above definition. The organs are in precisely the same position for sounding *w* as they are for sounding *u*, the mouth being slightly open. But no prolongation of *u* will make *w*. It is not heard till there has been the slightest closure of the inner edges of the lips: and when that closure has ceased, and the lips open, then the *w* is heard. Since however this action may be exceedingly slight, the difference between *u* and *w* may be infinitely reduced.

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[1] The physiological side of phonetic change was only incidentally touched upon in the first edition of this work. This, it is believed, caused some indistinctness in the account there given.

[2] Thus Prof. Whitney (*On Lepsius' Standard Alphabet*, p. 24) argues that while some consonants (*k*, *g*, &c.) are always consonants, and some vowels (*a*, *e*, *o*) are always vowels, yet some vowels (*i*, *u*) are consonantal, while *l* and *r*, and even the nasals to some degree, are vocalic: accordingly he declines to draw a hard line between, for example, *u* and *w*; but he holds that we ought to present the entire body of known sounds in lines, ranging from the most unmixed vowel-sound to the most absolutely obstructive consonant of each class. Thus what we may call the labial line would be *a*, *au* (the English sound), *o*, *u*, *w*, *m*, *v*, *f*, *b*, *p*. No doubt such a scheme is useful in bringing clearly forward the connection of sounds: but by the definition adopted in the text it is believed that a real difference between *u* and *w* is expressed.

[3] *Principles of Speech*, p. 12.

Difference in the material of speech:

We have thus distinguished sounds into vowels and consonants. But now comes another important distinction. The material of speech is breath, put into form by the position or action of the mouth. But this material may suffer an important change before it enters the mouth. If the glottis or aperture through which the breath passes from the windpipe be fully open[1], then breath pure and simple issues into the mouth, there to be moulded into sound. But the sides of this aperture are two ligaments called the chordae vocales[2], and these chords are capable of tension, and of being brought together so as to close the glottis altogether. When by their approximation the glottis is narrowed, they vibrate as the breath passes through: and thus the breath is rendered sonorous, and becomes—not mere breath, but genuine voice. Now the same position of the organs of the mouth will give different results, according as breath or voice is emitted from the windpipe. Check the breath by closing the lips, and as the lips open the sound *p* is heard. But check voice in the same way, and the sound will be *b*. Physiologically there is no other difference between *p* and *b*. Many terms are in common use to express this distinction. Thus *p* and the other similarly produced sounds are called hard, or surd, or voiceless, and *b* is called soft, or sonant, or voiced. None of these terms are quite unassailable: no consonant is properly "surd:" and "voice" in ordinary speech is applied to the current of air which forms *pa*, just as much as that which forms *ba*: "voiceless" too is a mere negation; "breathed" would be better. But the name matters little if we understand the idea.

"Hard," "surd," or "breath-sounds," distinguished from "soft," "sonant," or "voice-sounds."

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[1] See however note at page 64.

[2] See M. Müller's diagram, *Lectures* 2, 113.

In general, when I am not speaking of the method in which each sound is produced, I shall retain the names hard and soft, as being well known, conveying an intelligible idea, and not likely to mislead if properly explained. All vowels are modifications of voice, that is, soft: consonants are either breathed or voiced, hard or soft.

Double classification of consonants: I. according to the nature of the contact.

Consonants[1] may be classified either by the nature and degree of completeness of the contact of their respective mouth-organs, or by the names of the organs concerned. Thus where the contact is complete, where the current of the breath is entirely stopped, we have *shut* or *explosive* sounds: these are the breath-sounds K, T, P, with the corresponding voice-sounds, G, D, B. To this class must be added the aspirates GH, DH, BH, of the original Indo-European speech, which have been preserved unchanged by no nation except perhaps the Hindus. The distinguishing mark of these nine sounds is their incapability of prolongation: if we attempt to prolong them we only prolong the time during which the breath is pent up against the tongue or the lips, during which no sound at all is heard: the sound as before explained is merely the outbreak of the breath or voice when the obstruction is removed; and this can last but for a moment: hence these sounds are well called *Momentary*. This title marks them off from all the others to follow, which are capable of prolongation until the air in the lungs is exhausted, these are therefore called *Continuous*, or (as distinguished from explosive) *fricative* sounds. In them sound is heard while the organs are still in a position more or less open according to the degree of contact: and if there were no further closing and opening of the organs, they would by definition be vowels: but, because the sound is not fully heard until the organs are relaxed from the position in which they were held, a certain action (sometimes exceedingly slight) is required, and therefore they are consonants.

(i.) Momentary or explosive consonants.

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[1] The description of the English sounds in the following sketch is taken almost entirely from Mr Bell's *Principles of Speech*.

I have said that the aspirates GH, DH, BH were momentary sounds: but they have some claim to an intermediate position between the two classes. They have not been retained in any European speech, and therefore their sound is strange to us, and must remain a matter of some doubt. The opinion commonly held about them is that they were not originally compound sounds (as might seem to be implied by these symbols): that is, *gh* would not be truly represented by such a compound as that in "log-house," where there are two elements of about equal importance. The sound represented by the *h* in each case was much less than this, and also was not separated from the preceding momentary sound. It was probably the slight escape of breath, which is possible at the very instant of the sundering if the contact be exceedingly slight. This appears to be the sound given to the Sanskrit aspirates in India at the present day. This slightness of contact explains the passage of unaspirated into aspirated letters which is clearly traceable in Sanskrit: this takes place almost always when the letter is combined with another consonant, generally *s*: e.g. Indo-European STA becomes Sanskrit √*sthā*. Now in all compounds one part is liable to suffer: here the exertion in pronouncing the *s* diminishes the strength of contact for the *t*; and the result is a slighter *t* followed by a breath in the same action[1]. It is because of this slighter contact, and because of the possibility of slightly prolonging the breath, that these aspirates approximate to the continuous consonants: but they are much nearer to the momentary class, and will be included in it.

(ii.) *Continuous or fricative consonants:* (1) *nasals,*

First among the continuous letters we take the nasals, NG, N, and M, because of their close relation to the shut consonants. To explain their nature we must enter a little more into physiology. There is a cavity called the pharynx immediately behind and rather higher than the mouth: it is the termination of the throat canal, prolonged behind the soft palate, which divides it from the mouth[1]; and it has a passage to the air by tubes through the nostrils. It is thus obvious that air issuing from the windpipe may finish its course in two ways: either passing above the tongue, and *below* first the soft palate, then the hard palate, and so to the mouth; or *behind* and *above* the soft palate and by the nasal tubes to the nose. Now this soft palate is moveable: it can be raised so as to cover entirely the opening of the nasal tube from the pharynx, and this is its position whilst we sound all the consonants hitherto described: during them the breath has access both to the pharynx and the mouth, but having no egress from the pharynx it is discharged from the mouth alone: the pharynx however plays an important part, for in every proper articulation the pharynx is distended with the breath, and it is the natural contraction of the pharynx alone, when the check in the mouth is removed and the air escapes, that causes the audibility of each of these letters[2]. But if the soft palate be low enough to allow air to pass to the nostrils, as well as to the mouth-cavity, then the nasals are produced, whilst all the organs of the mouth are in precisely the same position as they were for the explosive consonants, and the sound is not complete till that position ceases. It is possible to produce them either with breath or voice; but it does not seem that any European nation has ever used breath-nasals. Therefore NG, N, and M, are nothing but nasal modifications of the voiced-sounds G, D, B[3]. Similar modifications of vowels are clearly possible, and are actually used by the French in the words *en*, *on*, &c.: here the mouth is held in the required vowel-position, but some of the voice is suffered to escape through the pharynx.

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[1] Sometimes the aspirate seems to be produced by the assimilating influence of a preceding *r*, e.g. in *pra-thama* "first," where the analogy of other languages leaves no doubt that the suffix was originally *tama*.

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[1] The soft palate or velum pendulum, with the tongue-like little uvula attached to it below, may be seen by any one who will stand before a glass and put his mouth into the position for sounding *Ah*.

[2] This is Mr Bell's account: see *Principles*, p. 44.

[3] The common phrase that a person "speaks through his nose" when he has a cold, is therefore clearly erroneous. He ought to speak through his nose, but cannot; the ends of the apertures being closed: therefore instead of *m* he sounds nearly a *b*: and instead of *n* either a *d* or an *l*.

(2) *central consonants,*

(3) *lateral consonants.*

While then the nasals belong to the continuous consonants, they yet have one property common with the momentary class, that they require complete contact of the mouth-organs. This is not the case with any other continuous sounds. In them the flow of the breath or voice is only slightly impeded, so that a certain amount of sound issues from the mouth before its full completion by the opening of the organs employed. Their different character, according to the difference of these organs, will be described immediately: but they may here be divided (as has been done by Mr Bell) into two classes distinguished by the nature of the contact. If the organs are in contact no longer *entirely* as for the short consonants, but only *at the sides*, so as to leave a *central* aperture for the flow of the breath, we get the first class, to which belong the English sounds Y, R, Sh, which is breathed, Zh, the same sound voiced and denoted in the word *seizure* by Z (in fact the French J), S, Z (as in *zest*), Wh (that is, Hw), and W; also many other sounds in other languages, some of which will be given shortly: these may perhaps be called central letters. But if the contact be *central*, so that the air escapes by apertures *at the side*, a second class of continuous sounds is produced, among which are the English L, Th (breathed as in *thin*, voiced as in *then*), F and V: let us call these lateral letters. This distinction may be seen by contrasting the English R and L. In both the fore-part of the tongue is raised to the fore part of the palate: so far the method of production is the same: but in R the whole of the mouth is closed by the tongue except a very small portion of the centre of the palatal arch, by which the voice escapes[1]; whilst in L that very same portion of the palate is covered by the tip of the tongue, and the voice escapes past the sides. The importance of the distinction is this: we see from it how easily letters so cognate in their formation can pass one into the other; which is notably true of R and L.

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[1] This is not meant as a *full* description of *R*.

(4) *laxly vibrated or trilled consonants.*

A further class of sounds is distinguished by Mr Bell as being produced by a "lax vibration of the approximated organs." To this belongs the R heard in Scotland and France, and (rather modified) in parts of Germany—a roughly trilled letter, which is produced by laying the fore part of the tongue loosely against the fore part of the palate and causing it to vibrate with a strong breath. This differs essentially from the English R, in which a trill is either not at all or scarcely heard. A similar lax approximation of the uvula to the back of the tongue, and vibration from a smart breath, is said to produce the Northumberland burr.

We have thus seen that consonants are momentary, or continuous, whether central, or lateral, or vibrated. Let us now make a cross division of the same according to the organs employed in their production[1].

II. *Consonants arranged according to the organs employed:* (i.) *faucals* (?)

If we commence with the first portion of the air-tube which begins with the glottis and ends with the lip, the first sound which seems to be consonantal, is H. Prof. Lepsius[1] holds that we pronounce this sound below the guttural point immediately at the larynx; and proposes to make it a member of a "faucal" or "laryngal" class, the importance of which lies chiefly in Semitic speech. This is of course the spiritus asper of the Greeks. The spiritus lenis, according to the same authority, is "the sound produced by closing the throat and then opening it to produce a vowel:" for example, in sounding the words "go 'over," care being taken that the glottis is closed between the two words: in this case a slight gurgling sound is distinctly heard before the second *o*: but if the current of breath is maintained, the vowel will be pronounced perfectly pure, and the "soft breath" will not be heard. The spiritus lenis however does not stand to the asper as a voiced to a voiceless sound, because the chords are not *stretched*, but only *brought nearer*, so as to narrow the glottis[1]. Yet this spiritus lenis is so classified both by

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[1] Much light will be thrown on this part of the subject by consulting the diagrams in Max Müller's second series (3rd Lecture), or Mr Bell's in *English Visible Speech for the Million*,—price one shilling. The description of the organs of speech by Prof. Huxley, in his *Elementary Lessons on Physiology*, is exceedingly clear.

[2] *Standard Alphabet*, p. 67.

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[1] This is also Brücke's account, see M. M. 2, 128. It seems to me that the means by which the chordae vocales can be put into such a position as to produce sound are twofold; first, by the downward motion of the thyroid cartilage, by which the chords are necessarily stretched, and slightly approximate; secondly, by the closing of the two arytenoid cartilages, which necessarily bring the chords together, but need not necessarily stretch them, at least not so much as to make them vibrate clearly on the passage of a current of air. This I take to be the position intended in the text above.

In the account which I have given at page 58, that the hard sounds are produced without voice or vibration of the chordae vocales, while there is such voice when the soft sounds are produced, I have followed Brücke, the most eminent writer on the physiology of speech. Yet I cannot repress a suspicion that the difference between the two may after all be only one of degree, and not of kind, that there must be some approximation of the chordae even for hard letters. If the glottis be perfectly open, how do hard sounds differ from mere breath, which may be articulated in the mouth without ever producing a *k* or a *p*? It seems to me that for all consonants the edges of the chords must be approximated by the closing of the arytenoid cartilages, but approximated slightly for the hard and more completely for the soft consonants; perhaps in the latter case there is more of that perfect tension, caused by the action of the thyroid, which is doubtless necessary for the full vibration of the chords in vowel-sound. In this case the spiritus lenis would really stand to the spiritus asper exactly in the relation of a soft to a hard consonant, and Max Müller's arrangement would be justified. But then Helmholtz's statement (which he quotes at 2, 131) that "the glottis is wide open with the tenues (hard letters) and therefore unable to sound" must be modified.

The double action upon the edges of the glottis mentioned above is not discriminated by the writers on linguistic science with whom I am acquainted; they also speak generally of "tension and approximation" as being necessary to sound, but without saying whether one is possible without the other. My own practical knowledge of the physiology of speech is very limited, being confined to the examination of specimens in the Cambridge Anatomical Museum, with the assistance and explanations kindly given by Prof. Humphry, and H. N. Martin, Esq. of Christ's College. So I only venture to make the above conjecture in a note whilst in the text I follow the received account. I notice that Prof. Huxley (*Elements*, p. 200) speaks of "parallelism of the edges of these chords," i.e. some approximation of them, as necessary to produce any sound; and the same is implied in the full account of the organs of speech given in Carpenter's *Physiology* (pp. 709—728), which however contains much that is quite erroneous about the actual sounds.

Lepsius[1] and by Max Müller: by the latter on the ground that "in pronouncing it more or less distinctly the breath is checked near the chordae vocales, and can be there intoned[2]."

Different view of the nature of h.

A different view of the character of the H sound is given by Prof. Whitney and by Mr M. Bell: who working quite separately are in this matter in substantial accord. According to the former, "H is the corresponding surd to all those classes of sound which have not each its own special surd[3]." And the latter says[4], "H is to the vowels exactly what P is to B, F to V, S to Z, &c.—a breath-variety of the same formations." Prof. Whitney will not allow that H when followed by a vowel has any independent existence: there is one position of the mouth, and *but one*, for what we commonly regard as *two* sounds in *ha*, *he*, *ho*, &c. He says[5], "H is an anomalous member of the alphabet. Every other letter represents a distinct position of the organs of the mouth, through which alone it can be uttered: the *h* has no position of its own, but is uttered in the following letter. When we say *ha*, there is no shifting of place of the mouth organs, as we pass from the former to the latter sound; there is merely first an expiration of breath, then of sound, through the open throat. So also when we pronounce *he* or *who:* the position of the tongue by which *i* is uttered, or that of the lips by which *u* is uttered, in those two words respectively, is taken up before the utterance of the *h*, not after it: there is again only a change from breath to sound as the material employed, no change as regards the oral modification to which the material is subjected." And the same conception is extended by both writers to the consonants: thus *hy* is regarded as the voiceless variety of *y*, just as *p* is of *b*. This theory seems to me more plausible with regard to the vowels than to the consonants. Yet even for the vowels, it will be observed that Prof. Whitney allows a change from breath to sound: he does not regard *ha* as simply a voiceless vowel: we have first breath, whence the aspiration; then sound, whence the *a*: but the position, he thinks, throughout is the same. I am no physiologist; but it appears to me quite conceivable that if the *h* be (according to Lepsius) a faucal consonant, it might be sounded so near to the glottis—the interval between the emission of the breath for the *h*, and the voice for the *a*, might be so short—that the change from consonantal action to vowel position might be imperceptible, and so the idea might erroneously be formed that the position for the *a* was taken up before any sound is uttered. This doubt of the priority of the vowel position is confirmed when I pass to the parallel variety assigned to the consonants, *hw* to *w*, &c. When the Indo-European *kwa* was changed to the Gothic *hwa*, our "who," did the Goths put their mouths into position for the *w* before making the sound which in this case is (on any hypothesis) a remnant of a self-existent *k*? A further difficulty presents itself to me. By this theory—which is beautifully symmetrical—a voiceless counterpart is provided for every voiced consonant which has not got one: *hy*, *hr*, &c. Then where the voiceless variety does exist, it ought to be identical in sound with the corresponding voiced sound preceded by *h*. But is this so? Is *hv*, for example, identical with *f*[1]? No doubt the aspiration may be made so strong that the difference disappears, but I think it is quite possible to sound *hva* distinct from *fa*. But this ought to be impossible if *h* has no independent existence, apart from the following sound. Again, what are we to say to those cases where *h* is final, as in Sanskrit? Here there is no vowel for it to be merged in. This argument, it is true, needs some limitation: although *h* occurs at the end of numerous Sanskrit bases, it is changed in all the cases of the noun which occur in actual use by the addition of the suffixes: e.g. the base *Kâmaduh* becomes in the nom. *Kâmaduk*, acc. *Kâ-*

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[1] p. 76.

[2] II. 130.

[3] *On Lepsius' Alphabet*, p. 16, note.

[4] *Principles*, p. 38.

[5] *Ib.* p. 37.

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[1] *F* is voiceless, corresponding to *v* which is voiced.

ham, &c.; and probably even the vocative, which ge- .y is the pure base, here, as in some other cases, fol- the nominative. So also many roots end in *h*, but they appear as verbs the *h* is never final[1]. The n *visarga* too, which is not *h* but a very weak aspi- ı, taking the place of final *s* under certain conditions, w at least barely audible: Prof. M. Williams compares vanescent sound of *s* in French in such words as *les*. it is perfectly *possible* to sound *h* final in India; and assured by Prof. Cowell, that the difference, e.g. be- ı *va* and *vah* in the mouth of a Pandit is perfectly ıct. But this again would be impossible, if *h* is only ed in a following letter.

incline to the old belief that *h* is a genuine conso- though produced extremely near the glottis, in con- nce of which it readily combines so much with a fol- g vowel, as to seem to be produced in the same act. think that there may be a soft *h*, which differs from dinary *h* almost, if not quite as much, as any soft con- t differs from the corresponding hard: and that this differed infinitesimally (if at all[2]) from the breath after the momentary sound in the original aspirates.

(ii.) *back-palatals, or "gutturals," k, g, ng, ch (Germ.), g (Germ.),*

ext in order come the undoubted consonants K, G, IG. These are formed by bringing the root of the e against the soft palate. The position of the organs ı the mouth is the same for all: the difference be- . K and G has been already mentioned: one is formed breath, the other out of voice. In sounding NG, as other nasals, the soft palate is lowered so as to un- the end of the nasal tubes in the pharynx. It differs them in that all the voice passes through the nos- whilst in *n* and *m* much escapes by the mouth. The ı of this is that the check is applied as far back in ıouth as possible. Since then there is a perfectly open passage through the nasal tubes, NG is almost a vowel: still it cannot be considered as absolutely complete until the mouth-organs are separated. There is a want of distinctness, if the sound is terminated not by separating the palate and tongue, but by closing the windpipe[1]. This sound is very common in English, especially at the end of a word: which is the cause why the French nasal vowels (*en, on,* &c.) constantly receive this sound from Englishmen. The principal reason for doubting whether it occurred in the original Indo-European is the absence of any symbol to denote it: but its occurrence in so many, if not all, of the derived languages, may be taken as a proof that it was at least known, if not so fully established as to have a special sign for itself, such as is found in Sanskrit and Zend only. If the tongue be kept in the same position, but in looser contact with the palate, so as to produce continuous sounds, we get a central pair (voiceless and voiced) not occurring in English, but in the German Ba*ch* and Ta*ge*: for the corresponding lateral sounds, Mr Bell can suggest nothing but the hiss of wildfowl (voiceless), and a Gaelic *l* (voiced). None of these continuous sounds were Indo-European. This class is commonly, though not correctly, called *guttural*. A more correct term would be Back-palatal: but the old term will be retained as well known and convenient.

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[1] rof. Cowell tells me that in Bengâli, where the *a* final in Sanskrit is regularly dropped (e.g. Râm for Râma), it is retained after *h*

[2] e note on page 64.

(iii.) *middle-palatals*," or "*palatals*," *ch* (?), *j* (?), *ç*, *ch* (*Germ. soft*), *y*,

The next class is formed by the middle of the tongue against the hard palate. Strange to say, it is doubtful whether any momentary sounds belong to this class. In Sanskrit we find *ch* and *j*, which are now pronounced as in English *cheer* and *jeer*. Nearly all physiologists are agreed that these are double sounds: that *ch* = *tsh* and *j* = *dzh*. Consequently, Prof. Lepsius is certain that the old Sanskrit pronunciation must have been different, since none but single sounds were represented in Devanâgarî by single symbols. What this single sound may have been he does not suggest: but he puts a symbol for it into his alphabet (*k'*, the same which is commonly used for the modern sound). It may have been something like that heard in the vulgar English "kyind" for kind, where the parasitic *y* turns the *k* into something between *ch* and *k*: and in all languages where the sound *ch* occurs, it has been formed from *k* by some such corruption; *cha* (Sk.) is from original *ka* (Lat. *que*), just as English "church" is from "kirk," and the Italian *cima* shews its origin by its spelling. I am not however sure that the English *ch* is necessarily a compound sound. It has a constant tendency to become so, by prefixing a parasitic *t*: but I believe that it is possible to pronounce it pure: and that this pure sound may be the Sanskrit *ch*. I know that no German will believe this: but it seems to me impossible that there should be no momentary sound between *k* and *t*. The nasal of this class is found in the Asiatic languages; it was sounded probably as the *gn* in Italian "Campagna." The continuous sounds are numerous in this class. If the contact be made slightly but without varying the position from that for *ch*, we get a voiceless sound, which is heard in the German *ich*, and is at least not unlike the initial sound of our "hew" (i.e. hyoo): the voiced sound is the common Y of "yew." To this class also must be referred the much-discussed Sanskrit palatal *s*, written as *ś* by most English writers on Sanskrit, as *s̀* by Lepsius, as *ç* by others: I prefer the last symbol as pointing to the historical fact, that this sound, like that of *ch* and *j*, was corrupted from the gutturals. As Lepsius observes, Englishmen in sounding the German *ch* in "ich," &c. frequently produce a sibilant instead. If, therefore, we pronounce that *ch* as well as we can expect to do, we shall pretty nearly pronounce the Sanskrit *ç*. These continuous sounds are all central: there are no lateral sounds[1] of this class, which should correctly be called Middle-palatal, but for convenience may be called Palatal simply. Of all its members only *y* seems to be Indo-European.

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[1] *Principles*, p. 50.

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[1] Mr Bell assigns the two English sounds of Th (þ and ð) to this class as laterals on the ground that the middle of the tongue (he rather deceivingly calls the middle the front) is raised in pronouncing them. To me the position of the middle of the tongue seems to be unimportant —in Max Müller's diagram (2. 134) it is even slightly depressed—and the tip to be the only necessary agent. See below, page 73. It is however quite possible to sound them with the middle of the tongue raised.

(iv.) *mixed-palatals, s, z, sh, zh,*

From this class the natural transition would seem to be to a Front-palatal class, formed by the tip of the tongue. But there are sounds which lie between the two classes. Thus it is possible to raise the tongue to the whole of the middle and front of the palate: and thus we get—no momentary—but the continuous sounds S and Z as in "advice" (s) and "advise" (z). These letters are commonly regarded as dentals. In reality however if the tip of the tongue once touch the teeth the sound is no longer *s* but *th,* in fact a lisp is produced[1]. A very slight modification of this position gives the pair Sh and Zh, as in *s*ure (sh), plea*s*ure (zh). For these the middle part of the tongue is not so much raised, and the point is drawn back: the aperture is therefore somewhat increased. There is no natural tendency however of *s* to pass into *sh* except under assimilating influence, e.g. when a German says "shtein" for "stein." Out of this class the voiceless *s* is Indo-European[2]. The best name for these sounds would be Mixed-palatals, but the difference being only slight, they are always classified with the Front-palatals; but it should be remembered that they are properly sounded farther back in the mouth.

(v.) *linguals or cerebrals, ṭ, ḍ, ṇ, ṣ,*

But we are not yet past the middle palate: though the class of which we have to speak need not detain us long. I mean the Indian Linguals, or Cerebrals—neither name quite describes them—which are said to be sounded by bringing the lower surface of the tongue against the roof of the palate. Practically then the agents in their production are the tip of the tongue and the middle of the palate. The sounds are four, Ṭ, Ḍ, Ṇ, Ṣ; the dot beneath them is the diacritical mark of Lepsius and most other philologists. Their history is tolerably clear: they arise from the simpler T, D, &c., primarily through the influence of a neighbouring *r*[1]: afterwards the cerebrals, so produced, themselves spread the infection. The *r* itself was lost in so doing; e.g. *karta* became *kaṭa*, or, more rarely, assimilated as in *bhaṭṭâ* for *bhartâ*. Now in pronouncing *r* the tip of the tongue is bent slightly back, almost exactly as I have described it above. If then after sounding this *r*, the tongue be kept in the same position instead of being moved forward to the ordinary position for *t*, the result is *ṭ*; but the contact being complete for *ṭ* instead of being imperfect for *r*, the stronger letter forced the weaker out. The change from *t* to *ṭ* must certainly appear to be from an easier to a more difficult sound; but when *ṭ* is regarded as the single result of the compound *rt*, the change will cease to surprise us. The sound of *ṣ* differs very slightly from our *sh* already described; the tongue must be drawn a very little farther back, and the point slightly raised.

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[1] *Principles*, p. 182.

[2] The diagram given by Max Müller for *sh* differs considerably from Mr Bell's; it is very like his diagram for *r*, except that the point of the tongue is not fully raised. So far as I am able to judge, Mr Bell's seems the more exact of the two.

(vi.) *front-palatals or "dentals," t, d, n (English),*

We now come to the Front-palatals, generally called Dentals. In not one of them however is the tongue commonly pressed against the teeth, though variations of them may be formed in that way: but the point of the tongue is brought against the front of the palate immediately behind the gums. Thus we get our English T, D, and N, all shut sounds, for which the mouth is in the same position. Not very different is that for our continuous central R, as in "row;" in which the tip is brought close to the palate, but without absolute contact, so that the air passes over it[2]. The difference between this sound and that heard in most modern languages is the absence of vibration, or at all events the very slight motion. In this respect English

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[1] See Bühler's Essay, epitomised in Ferrar's *Comp. Grammar;* where many illustrations are given.

[2] The sound of *r* in words like *are*, *our*, &c. is different from this, and will be described afterwards. It is a "glide;" see page 81.

CH. IV. agrees with Sanskrit: where the vowel *ṛi* is more like the vibrated or trilled *r*. It is a voiced sound: the voiceless *r* being heard by Mr Bell in the French "theat*re*," &c. Exactly corresponding to the central R is the lateral L. If, instead of obstructing the breath at the sides of the mouth, so that the current of air passes only over the point, we press the point firmly against the palate just as in T, D, but (not as in those sounds) prevent the tongue from pressing against the sides of the mouth, then we get L. Here, as has often been pointed out, the configuration of the mouth is so open as almost to constitute a vowel, but the sound is completed by the withdrawal of the tongue, and so comes under the definition of a consonant[1]. Like *r* it is a voiced letter, but here again Mr Bell detects a voiceless *l* in French "temple[2]." R is Indo-European: perhaps also L.

t, d, n (Sanskrit), Genuine dentals are found in Sanskrit. The Sanskrit T, D, and N are pronounced by bringing the tip of the tongue not against the palate, but against the edge of the upper teeth. This is the reason why the Hindus transcribe our dentals by their cerebrals, e.g. ḍirekṭar, for Director[3]: not that the cerebrals exactly correspond, but because they are nearer our sounds than the true dentals are. In fact the Indian *t* and *d* are the momentary sounds, corresponding to our continuous sounds þ and ð (Th and Dh): and beginners are advised (I am told by Prof. Cowell) to pronounce at first the Hindu *t* by our *th*, as a less error, and to obviate the certain confusion caused by using our own *t*. I do not know whether the dental or the palatal *t* and *d* was the original Indo-European sound: but probably the latter. There are no central continuous dentals: indeed their formation is clearly impossible. But þ and ð

þ (th), ð (dh),

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[1] *Principles*, p. 194.

[2] *Visible Speech*, p. 93. In *Principles* &c., p. 57, he considered that the Welsh *ll* was this voiceless sound; but in his later work he gives *ll* a mixed origin, from the point and middle of the tongue both raised as in *sh*; but differing from that articulation in that the sound is lateral.

[3] Max Müller, *Sanskrit Grammar*, p. 8.

are lateral dentals. Here the contact between the teeth and the tongue is only complete in the centre, and the breath escapes over the sides of the tongue. It is unimportant whether the central part of the tongue be kept sunk or not: if it be raised, as has already been pointed out, the position is the same as for *s*, except that the point of the tongue touches the teeth, while in *s* it does not. The sound of þ (the Anglo-Saxon "Thorn") is that of *th* in English *thin* and modern Greek *θ*, where it is probably corrupted from an aspirate *t'h*. The sound of ð (A. S. "Edh") is heard in *then*, and is also that of Danish *d* (in certain cases), of Spanish *d*, and modern Greek *δ*. Neither sound is Indo-European: neither is found in Sanskrit, or in Zend (except very rarely after *r* or *w*[1]); they are curiously sporadic developments of the West.

(vii.) *labiodentals, f, v (English),*

The next class is called the Labiodental. It consists of but two lateral continuous sounds—our English F and V. In producing these the upper teeth are pressed upon the lower lip, the air escaping between the sides of the lip and the teeth. The pronunciation of these letters will require considerable discussion when we come to the account of Greek and Latin variations. The sound of *v*, which is now heard "in England, France, North Germany, India[2]," &c., is generally supposed to have been Indo-European: but it is questionable whether that letter did not really fall under the next class.

(viii.) *labials, p, b, m, hw, w, f (?), v (central Germ.).*

Lastly, we have the Labial class—that formed by both the lips. The shut sounds are P, B, M. As in the case of the other nasals, the mouth is in precisely the same position and deals with the same material for *m* as for *b*: but, as was pointed out above, the mouth must be filled with air in sounding *m*, whereas in sounding *ng* almost the whole passes to the nostrils. Accordingly, whilst a tolerably clear *ng* can be produced without removal of the tongue from the back palate, only a very indistinct *m* is heard without the parting of the lips. The continuous central labial is W, which is voiced; as has been already said, a voiceless W is perhaps heard in the common English sound *wh* (i.e. *hw*). In sounding *w* the *inner* edges of the lips are put closely together, and the sound issues through an aperture in the centre; the position is the same as for *u*. It is indeed possible (as Mr Bell points out[1]) to pronounce *w* with a lateral as well as with a central opening: but the position is a very constrained one. The close affinity of this letter to *u*, and the ease with which the one sound is converted into the other in all languages, are strong arguments for assigning this rather than the labiodental *v*-sound to the original language. There is however a truly labial pair of sounds, F and V, distinct from the labiodentals with the same symbols. These are formed by bringing the *outer* edges of the lips together, while the breath escapes laterally. The voiced V is heard in Central Germany, e.g. in *weg*, and is also the sound of the Spanish *b*, and of the modern Greek *β*. This fact will be seen to have an important bearing on the question of the true sound of the Latin *v*. According to Mr Bell's diagram[2] there is a further difference between this V and the English W: this *v* is simply labial, the tongue lying at absolute rest in the bottom of the mouth: but in *w* the back of the tongue is almost in the position for sounding the back palatals. I do not know any language in which the labial *f* occurs.

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[1] Haug's *Grammar*, p. 16.

[2] Lepsius, p. 75.

We have thus traced the course of the breath or voice in the formation of consonants through the whole length of the air-tube from the glottis to the outer edge of the lips. The only remaining sound commonly heard in modern speech is the vibrated *r*, the rough trill: the formation of which has been sufficiently described already[3]. The results are given in the accompanying table. It remains now to be seen how far these physiological considerations

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[1] *Principles*, p. 53.

[2] *Visible Speech*, p. 63.

[3] At page 63.

To face p. 74.

	Dental		Labio-dental		Labial			
	point							
	upper		upper					
			lower		inner edges		outer edges	
	Sanskrit T TH	D DH			P PH	B BH		
		N				M		
h)					Hw	W		
	þ (th)	ð (th for dh)	F	V			F	V
Dental			Labio-dental		Labial			

General rules to determine the strength of sounds.

can supply us with any scale of sounds, ranged accordingly to the difficulty of their production, which may throw light on the changes which we shall find to have taken place in Greek and Latin. I do not propose to lay down any absolute and invariable scale, and to say, this sound is universally more difficult than that, and therefore this or that change took place in Greek and Latin. I shall hereafter describe the process of change in each language as it is historically traceable. But I believe that each and every change had a reason; whether that reason was some peculiarity (as no doubt it generally was) of the special people, or whether it was some physiological fact which is of much wider and more general application. Let us see whether such facts can be obtained from the details given above. It is quite possible that we may interpret those details wrongly, or apply right conclusions erroneously. If so, it is only to be hoped that subsequent research may set us right.

Momentary sounds stronger than protracted.

First of all, we may assert with confidence that a momentary sound is stronger than a protracted one, and therefore we may expect to find, as we actually do, that a momentary sound passes into a protracted one, but not vice versa, except from some assimilating influence which is sufficient to explain the apparent irregularity. It is clear from the nature of the sounds that the complete check given for a moment to the breath must require a stronger effort on the part of the organs of speech, than is needed when there is no perfect stoppage, but the stream of air is suffered to flow on in a slightly altered current until it is exhausted; just as the mill-dam endures a more violent pressure than the breakwater over which the stream rushes.

Hard sounds stronger than soft, each in their own class.

Next, among the momentary sounds, the hard will be stronger than the soft, each in its own class. It is true that the difference of effort in producing the two sounds is hardly perceptible. Physiologically we have seen that the difference between them is this: a greater rush of air passes through the glottis for the hard than for the soft sound, because the glottis is at least more open for the first class; whether it be entirely open or not (see page 64, note) is not material. Accordingly greater effort is needed to check the fuller column of air, though not so much greater as to be necessarily perceptible. It is not necessary that man should consciously economise his labour at each utterance: it is sufficient for my principle that he should consciously or unconsciously form such habits as actually involve the least expenditure of muscular energy, even where the saving may be infinitesimally small. There must be some physiological reason to explain the fact that in almost every language the hard passes into the soft, so far as change between them takes place at all. The only exceptions I know are that part of the Teutonic *Lautverschiebung*, or "shifting of sound," by which *g* becomes *k*, *d* becomes *t*, and *b* becomes *p*: and a certain tendency in the same direction in modern Welsh, not, I think, in the older Keltic, e.g. to pronounce "God" as Cot. Sometimes we find savages who pronounce no soft sounds at all, only hard ones: but this is different. I grant the difficulty of the Teutonic change, and can only account for it as an instance of the striving for distinctness[1], which sometimes acts counter to the principle of phonetic change. It may possibly be due to admixture of race.

Unaspirated sounds stronger than the corresponding aspirates.

Next, the aspirate is weaker than the corresponding unaspirated letter. This follows from the nature of the aspirates, of which I have already said something[2], and shall have more to say hereafter: the breath heard in each case follows upon less permanent, that is, less strong, contact. On this theory it no longer seems unnatural that the more voluminous *kh* should be weaker than *k*, or *gh* than *g*. But when the sound denoted here by *h* became at last, as I believe it did, not a subsidiary breath, but an independent sound, the spiritus asper; then *kh*,

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[1] See Chapter I. p. 4.

[2] See p. 60.

gh, &c. must be treated as compounds, subject to the ordinary influences which affect compounds, such as loss of one of the members, or assimilation of one member by the other. This is the reason why, though *gh* be weaker than *g*, we can yet find in Latin, and perhaps in Greek, *g* in the place of original *gh*: e.g. *ang-ustus* from Indo-European AGH: *gh* has become a double sound, and the *h* has been dropped from the end of the compound. That the aspirates were in their origin later than the unaspirated letters, can be best seen in Sanskrit[1]—a language which especially deserves our thanks for performing within historical times so many of the oldest processes of language.

Of th ferent classe guttur are th strong

The hard then is naturally stronger than the soft, and the unaspirated than the aspirated letter. What now is the relation of one hard to another hard? What law of strength governs the exchange which we sometimes find between one class and another, guttural and dental, dental and labial, &c.? Where there is a complete check, the rule that their strength varies as their distance from the lungs seems to be absolute; that is, that the gutturals are stronger than the palatals (in those languages which possess palatals), the palatals than the dentals and the labials: and this is the order of the consonants given by the acute Indian grammarians, doubtless intentionally. The current of air is strongest at the outset, and gradually grows weaker. No doubt an additional impulse may be given to it at any point of its passage; but if no such impulse be given, it naturally is feebler at the lips than in the throat. Therefore the minimum effort required to stop it at the lips is less than in the throat: in other words, a labial is naturally a weaker sound than a guttural. The merest closing and opening the lips is sufficient to produce the sound *p* with hardly more additional effort than is required for the mere passing out of the air within the mouth; but it is impossible to sound

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[1] See p. 60.

k without conscious effort. Therefore we must expect *k* to pass into *p*, but never without strong reason allow that *p* can pass into *k*. Here again the Sanskrit stands us in good stead by its greater number of consonants. The theory, that the guttural *k* is naturally the strongest of all sounds, is borne out by the fact that *k* actually passes into the palatal *ch* but not *ch* into *k*: when we have the double form in a group of Sanskrit words, we find regularly *k* in corresponding words of other languages; so that *ch* is clearly a Sanskrit weakening. Again, the greater strength of the gutturals is shewn by the difficulty which children find in pronouncing them; also by their hardly appearing in terminations, or when they do, yet never as the second element of a consonantal group, not *tk*, *dg* but *kt*, *gd*. This last argument indeed cannot be pressed to its full result, for we find in terminations *pt* and *bd*, as well as *kt* and *gd*, so that by this reasoning *p* and *b* ought to be stronger sounds than *t* and *d*. But the reason here seems to be that labials, which require perfect closing of the lips, are ill suited for the end of a word, where we instinctively prefer those sounds in which the breath is not articulated by the lips, as among the vowels *e* rather than either *o* or *u*. Probably indeed dentals and labials do not differ much in strength, but still, in the few cases of exchange, it is the dental that seems to pass into the labial.

General rules hardly possible for protracted sounds.

We have thus got a general idea of the sort of changes we must expect to find among momentary sounds. For the protracted sounds it is less easy to lay down rules. They are in their nature much less definite than the momentary; and much depends on the length of time during which they are sounded. The nasals, as we have seen, are to some extent dependent on other stronger consonants; the guttural nasal indeed not often standing single. Curtius thinks that where we find *m* and *n* in corresponding words the *m* is the stronger. But most of his examples (e.g. δόμον but *domum*, Sanskrit *damam*, and the German *Faden* for old *Fadem*) are of final *m*, which, like other

Among the nasals m may be stronger than n.

Of the spirants, y is the strongest;

labials, is inconvenient at the end of a word. If we assume the strength of the spirants in the order of their pronunciation, we should get *y*, *s*, *v*, which is probably correct, but they do not seem to interchange much. Certainly neither of the last two ever passes into *y*; and Curtius thinks even the few cases where we find ϝ on inscriptions instead of original *y*, e.g. ϝότι, are pure mistakes in writing; it being known that some letter had dropped, and more trace of *v* having been left than of *y*. The history of *h* differs for different languages. In Greek it is always the remnant of one of the spirants, and weaker than any of them; in Latin it has replaced *gh*, and seems to have been pretty strongly sounded. *S* and *r* are pronounced alike with the point of the tongue; but in *s* the back of the tongue is also employed; in *r* (at least in English *r*) the point of the tongue alone is raised to the front of the palate: for the vibrated *r*, the tongue is in very much the same position as for *s*, but (ex hypothesi) is held much more loosely. Whichever then was the sound of the Latin *r*, or the Laconian ρ, we can understand the transition from *s* to those sounds.

h is the weakest in Greek.

S is stronger than r.

Central sounds more difficult than lateral.

Central sounds appear to be more difficult than lateral. Here we should not feel sure of the fact from physiology, but the regular change of *r* into *l*, and *s* into *th*, is convincing. Where *l* has become *r* in modern Italian or French, the cause is probably dissimilation, as in old Latin: e.g. in "pellegrino," for peregrino, or in "apôtre," for apostole; here the *l*, a lateral sound, which requires a central closure, was more difficult than a central one immediately after the central opening of *t*. *R* and *l* are pronounced at the same part of the palate; *s* and *th* are not so; but a looser *th* can be sounded without putting the tongue against the edge of the teeth, by laying the back of the tongue against the roof of the palate—not the mere point, which would produce *l*[1]. In this *th*, the tongue may indeed touch the teeth, but this is not essential to the sound (as for the proper *th*). Prof. Huxley tells[1] of a man whose tongue had been amputated, who could yet sound *th*: the contact must have been given by the stump of the tongue against the edge of the palate. *S* may however pass into the true *th*, if in sounding it the tongue be allowed to touch the teeth, because then central contact takes place, and the sound must be emitted laterally.

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[1] It is this *th* probably which is oftenest substituted for *s* in lisping; and for which *s* is substituted, if such substitution ever takes place, which

R passes into w.

With respect to continuous labials I know no general rule that can be given. I think no language has more than one pair of them. *R* passes into *w* in lisping, which agrees with the natural order of the sounds; which order holds, as a rule, for continuous as well as for momentary sounds. But as they are less firm than momentary sounds there is more scope for assimilation, which may neutralise the common order.

Classification of vowels.

It is more difficult to determine with exactness the true sound of vowels than of consonants. For many consonants there can be little or no variation: in whatever lands *p* and *b* are sounded they must be sounded at the same place; there can be no great range for *k* and *g*; and so on. The points too of contact, which give distinct difference of sound, are limited. But we can never be sure that we have obtained all the varieties of vowel sound: they are unlimited. For our purpose however it is sufficient to point out the best marked points in the scale, in the assurance that if some of the Greek and Latin vowels did not exactly coincide with any of these, the difference could not have been great. As I said at the beginning, all vowels must be pronounced as in Italian, except English sounds which are given as examples in brackets; e.g. (ee) denotes the *i* sound. It is to be remembered that vowels are various *open positions* of the vocal tube,

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I greatly doubt. The instance "says for sayeth" (Prof. Mayor, l. c. p. 335) is, I think, an error; the two forms were distinct: "sayis" or "sayes" is old *North* English, both sing. and plur.; to which in old *South* English "saith" corresponds; though later "sayen" was the plural in use.

[1] *Elem. of Phys.*, p. 203.

modifying in various ways the breath which has received tone from the vibration of the stretched chordae vocales.

The two most important vowel classifications, with which I am acquainted, are those of Prof. Lepsius, and Mr Melville Bell. They differ considerably: that of Prof. Lepsius is best suited to render plain the historical development of vowel sound in Greece and Italy, and will in the main be followed here. But Mr Bell's system is important in many ways, and as I shall take a good deal from it, it will be best briefly to describe it first.

Vowels and glides.

Mr Bell recognises in all thirty-six vowel sounds, and twelve "glides;" the latter being "*transitional*" sounds, which differ from consonants, in that the vocal tube is so open that there is no friction in the mouth: they would therefore be vowels, if they had any "fixed configuration," any permanent position; but they are sounded too short for this, and are essentially incapable of being prolonged. They principally occur as one of the two elements of a diphthong, and in this character they will come under our notice later on. Glides in English are frequent: thus the *y* at the end of "day," is certainly not a full consonant; nor is it a vowel, for it cannot be prolonged: it is a "transitional" sound between the two. Other examples are the *w* in "now," the *r* in "are," and "our:" the slight prolongation of vowel-sound heard between *a* and *r* in "va'ry," &c.[1]

I. *Nine "primary" or "close" vowels.*

(i) *Three "back,"*

(ii) *three "front,"*

(iii) *three "mixed,"*

Of the thirty-six vowels, nine are primary; that is, possessing the smallest opening of the vocal tube necessary to distinguish them from consonants. Three of these are formed with the back of the tongue, and so the position of the mouth does not differ much from that for *k* and *g*: these are called "back" vowels. Three are "front" vowels: for these the back of the tongue is raised to the arch of the palate, much as for *y*. The other three are called "mixed," because they combine the properties of each of these classes, being formed with the back of the tongue,

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[1] *Visible Speech*, p. 69 and 94.

and cross-wise, three "high," three "mid" and three "low."

II. Nine "wide" or "open" vowels, modifications of the nine close vowels.

III. Eighteen "round" vowels, modifications of the first eighteen.

but with the edges also raised to the sides of the teeth. The three vowels in each of these three classes are called "high," "mid," and "low," respectively, according to the degrees of elevation of the tongue. Thus, for example, the English (ee) in "eel," is technically called a "high front" vowel; the (u) in "up" is a "low mid," while the vowel of the French "que" is a "mixed mid[1]." Next, we have nine modifications of these nine primary vowels, called "wide" vowels. In these, "the resonance cavity is enlarged behind the configurative aperture[2]," by drawing back the soft palate and expanding the pharynx. By doing this, for example, when the tongue is in the same position as for sounding "eel," we get "ill"—a "high-back wide," instead of a "high-back" vowel. Instead however of the terms "primary," and "wide," I shall use the terms "close," and "open," for these two classes respectively, as being already in use in some languages to express, I believe, the same distinction. Lastly, each one of these eighteen vowels may be modified in a further way—thus giving us the whole thirty-six. The external sign of this modification is a contraction or "rounding" of the aperture of the lips, representing, as Mr Bell believes, a corresponding contraction of the guttural passage (the real cause of the change of sound) and probably also of the upper part of the larynx. If we "round" the vowel in "eel," for example, we get the German *ü*, "high-front round," according to Mr Bell's arrangement, "in which the labial orifice is reduced to little more than a chink:" while the broad aperture of (ah), which is a "low-back wide," is "rounded" to (o) in "on," "odd," &c. ("low-back wide round"), "by contracting only the corners of the lips[3]."

Number of English vowels.

Out of these thirty-six sounds, twenty-two occur in English. But six of these, the "mixed-wides," differ from each other very slightly. They are the sounds heard in "plac*e*s" (High), "fat*a*l" (Mid), "*e*rr" (Low), "pleas*ure*"

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[1] See the Table at page 83.

[2] *Id.* p. 71.

[3] *Ib.*

					Round		
		Back	Mixed	Front	Back	Mixed	Front
Low	Open	āh măn (Scotch)	err	an man (Engl.)	on Poll	-or	
	Close			ell	all Paul		“ beurre ”
Middle	Open	ask	-al	air pair Ital. open e	ore “ chaud ” pour Ital. open o	-ory	“ jeu ” “ Göthe ”
	Close	up	“ que ”	day pail Ital. close e	home pole	“ homme ”	“ une ”
High	Open	-tion	-es	ill pill	poor pull Ital.	-ure close o	
	Close			e͞el “ ĭl ” peel	po͞ol “ co͝upé ”		“ über ”

This Table is taken from *Visible Speech*, p. 94, with two differences. I have employed the terms "open" and "close," instead of Mr Bell's "wide" and "primary;" and I have exhibited the "Low," "Middle," and "High" letters together. The examples *above* the line in such divisions are Mr Bell's own; in a few cases however I have substituted examples, which he has elsewhere given, instead of some American and Cockney variations which he gives in this Table. I am responsible for everything *below* the line in each division. Where the space is blank, there is no English sound to give and none in dialectical English or foreign languages which seemed to me important for my present object. If indeed I had been consistent, I should have omitted all the English final syllables which are so acutely distinguished by Mr Bell; but I thought it worth while to include all English variations which could be discriminated by any ear.

(High Round), "orat*o*ry" (Mid R.), "orat*o*r" (Low R.). It will be observed that five of these sounds occur in unaccented syllables: and that they all represent variations of what is commonly called the "neutral vowel," that sound to which the vowels of all unaccented syllables have a tendency to return, and which is also supposed to be heard in "but," "son," "fir," and to be sufficiently denoted, by a single symbol, as by the *ẹ* of Prof. Lepsius. At all events, Mr Bell's distinctions will not be required by us, but the existence of the neutral vowel itself must be borne in mind, as it undoubtedly occurs in every language. It is sometimes called the *Urvocal*—unfortunately, as that may be interpreted to mean that it is the vowel (instead of *ah*) from which other vowels can be traced. Its most typical formation is no doubt that given by Mr Bell for the *a* in fat*a*l, where the tongue is in the position of perfect rest, without action of either the back or front part.

The "neutral" vowel.

Reasons for commencing with a.

We start with the vowel *a* (ah), for two reasons. First, on physiological grounds—it is the vowel par excellence, the most open vowel position: the back of the tongue is depressed beneath the soft palate, which however does not seem to be raised[1]: the lips are in the most open position, not "rounded." The second reason is found in the history of the vowels: we find, as a matter of experience, that when there has been change between *a* and *i*, or *a* and *u*, the change has always been from *a* to *i*, or from *a* to *u*, and not the reverse. Without, then, asserting that there ever was a time when *a* existed, and *i* and *u* did not, we may yet fairly call *a* an older vowel, because in many cases *i* and *u* are demonstrably younger. It has been pointed out by Schleicher that *a* is more distinctly vocal than either *i* or *u*, because while they are closely cognate to *y* and *w*, it always preserves its full vowel character. These three vowels *a*, *i*, and *u* belonged to the Indo-European language. Let us then make *a* our starting point, and proceed to investigate the relations of the other sounds to it.

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[1] Max Müller (II. 124), gives the result of Prof. Czermak's experiments, that the soft palate is lowest for *a*, then for *e*, *o*, *u*, *i* in order.

Two lines of vowels necessary.

If the tongue were the only agent in producing the various positions which give the different vowel-sounds, we should have been able to start from *a*, where the tongue is in the lowest position, and arrange all the vowels in one scale, ending with the highest position, i.e. at *i* that is (ėe). But this is not so. It has been already pointed out that each vowel sound so obtained can be modified by that contraction of the vocal tube which finds its outward expression in the greater roundness of the lip-aperture. This fact necessitates a second line, again commencing with *a* and running as far as *u* (oo): this at least is the extremity of the scale in England, but in pronouncing *u* the tongue is still at the back of the palate: if it be put through the same range of positions in this scale as in the other, the limit will be the German *ü*. It can hardly be doubted that these three English sounds, *ah*, *ee*, *oo* represent the three original vowels A, I, U. No other sounds, so far as I know, have ever usurped their place in any European language except our own.

Dubious vowels.

Now in each of these scales from *a* to *i*, and from *a* to *u*, there is a very great number of possible vowel-positions. I will point out only the most important in each scale. The first variations from *a* are however by no means easy to classify. There is a debateable land, and some sounds lie close on the unknown border-line. Such are the (ā̆) and (ŭ) in "ask" and "up[1]." By the (ā̆) of "ask" is meant a middle sound between "ah" and "an," which is constantly heard in conversation, but which has never been definitely assigned by custom to any word; it is nearly always heard in "ask." There is a transition constantly going on in England from the full ah-sound,

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[1] I differ here from Mr Bell, who classes these as "mid-back" sounds, they seem to me "mixed." My arrangement is nearer to that of Prof. Lepsius.

(i) *The "front" vowels.*

which survives now in so few words, to the short a̲ in "an," which perhaps belongs to no other language but the Sanskrit: and it would be quite possible to make some point in the intervening space, which should represent the (ă) of "ask;" but this has never been done. This (ă) is an open sound; the corresponding close sound is the (ŭ) of "up:" which certainly, to my ear, seems very like the "neutral" vowel of unaccented syllables. These two sounds, then, I classify in neither scale: but between the first variations of each. First, in the scale from A to I, the "front" vowels, as they may be called, come the short English (ă) of "an," which is open, and the (ĕ) of "ell," which is close: for these the back of the tongue is low[1], (though higher than for any vowel of the "back" class): and the point of the tongue is much depressed. Next to these, but produced by a considerable raising of both the back and front of the tongue, come the Italian open *e* (*è*), and close *e* (*é*). We have no exact equivalent in common English for the open *è*, except in words ending with the glide *r*, e.g. "pair:" the close *e* is nearly our long English (ā) when pronounced, as it almost always is, with a slight *i*-sound following it, in fact as a diphthong; whether the *i* be written or not, the pronunciation is the same, e.g. "pail" or "pale[2]." The vowel sound in "pail," if pronounced, as it is in some English dialects, e.g. in Cumberland, is more like the open *e*[3].

The last pair of sounds in this scale are open (ĭ) and close (ee): they are heard in "pill" and "peel" respectively. For these the tongue is almost exactly in the same position as for the consonant *y*, the back and point being both raised as much as possible, but not of course so near the palate as to produce friction. We have thus marked all the principal points from the extremely open *a* (ah), to the extremely close *i* (ee). All of these come into the class of "Front Vowels."

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[1] I do not understand Mr Bell's diagram of the position of the tongue for these two sounds. It seems to me, after repeated experiments, that he has placed the back of the tongue much higher than it really is.

[2] Compare Prof. Munro's *Remarks on the Pronunciation of Latin*, p. 6.

[3] Mr Roby (*Grammar*, p. 9) makes the Italian open *e* a "front," that is a primary or close, not an open sound; the class to which, according to Mr Bell, "ell" belongs. Mr Roby himself compares the Scotch sound of "ell," which is certainly much more open. According to his arrangement, Italian open and close *e* do not fit into my system of the open and close vowels. There is also some discrepancy between us with respect to the open and close *o*. I am not competent to decide the question, but give my own arrangement as in my view most probable. Mr Bell does not deal with the Italian vowels.

(2) *The back and rounded vowels.*

Next, let us take the list of "Back" and of "Rounded" vowels: in English they are identical: in French and German we have rounded front-vowels. First, come open (ŏ) and close (aw): heard in "Poll" (the bird) and "Paul[1]." Next, come the Italian open *ò*: the corresponding close sound is our (ō): therefore for classification it will probably be better to take our (ō) as the typical sound, and to regard the Italian *ó* as a deviation from it. If (ō) be heard in "pole" the open *o* will be pretty nearly heard in the Cumberland variation of the same word, or in the word "pour," where *r* follows. For each of these *o*-sounds the tongue is raised at the back from its position for (ŏ) and (aw); but not so much as for *e* in "pair" and "pale;" and the lip aperture is rounded. If now the mouth be placed in the position for "pail," and then rounded, the modified *o* of Germany (ö) or the French *eu* will be heard. Again, if the tongue be slightly raised from the position for "pole," and the lips very much contracted, we get the final English pair (ū) and (oo) in "pull" (open) and "pool" (close). The position of the tongue for this *u* (oo) bears the same relation to that for the consonant *w*, as that for *i*, mentioned above, bears to that for *y*. Lastly, if the lips be rounded while the tongue is in the position for the front vowel *i*, the result will be the German *ü*, and nearly the French *u*. It will be seen that the modified vowels *ö* and *ü* thus combine the characteristics of the two classes: in their tongue-position they belong to the first; in their rounded character to the second. They may therefore be fairly placed between them in the following "pyramid," the place which they occupy in that of Prof. Lepsius, though he gives no reason for putting them there.

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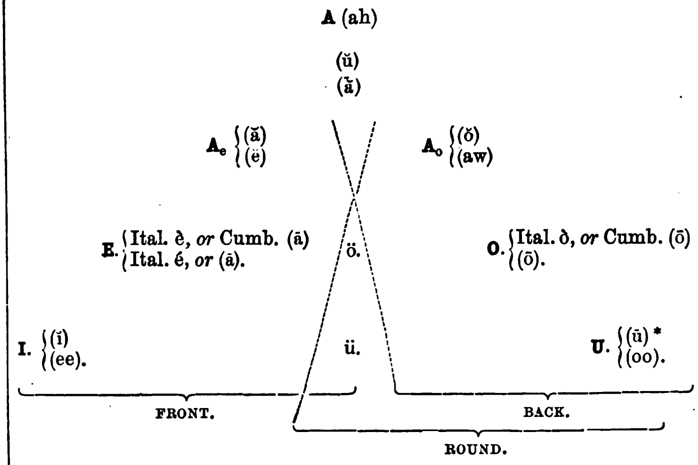
[1] The Italian close *o* seems to be nearer to *u*, or, as Mr Roby makes it, a "High Mixed *Wide* (i.e. open) Round."

Vowel pyramid.

The entire arrangement of the sounds is nearly that of Prof. Lepsius: but with the further distinction of open and close sounds throughout, and of the round vowels, for which I am indebted to Mr Bell. In each couple of sounds the open vowel is placed *above* the close, so that the lines pass from the most open sound (ah) to the most close (ee), ü, and (oo). The symbols A_e, A_o are employed to denote the sounds between *a* and *e*, and *a* and *o*, which occur at the beginning of these two lines. The marks of quantity above the English symbols must be understood as applying to the English only.



Terms "open" and "close:"

It will be observed that the terms "open," and "close," in the above classification, sometimes are equivalent to

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* I have marked this u long for want of a better symbol, in order to distinguish it from the (ŭ), e.g. "put" from "shut". But it is not really long, and cannot be pronounced so except in singing: see next page.

how far convertible with long and short.

"short," and "long." This is always permissible in English, but not always in other languages. Thus in English it is unimportant whether we call the *i* in "sin" short or open, the *ee* in "seen" long or close. In the tone of each man's ordinary speech it is impossible to pronounce "sin" long, without its becoming "seen:" but in singing, it is quite possible to lengthen the *i* without letting it pass into *ee*. It is indeed possible, on the other hand, to pronounce in our natural tone "seen" short, that is, so that the vowel shall occupy no longer time than the *i* of "sin;" which is the only test of quantity. Practically however with us, "seen" is always longer than "sin:" therefore, as I said, the terms "open," and "shut," are convertible in English; and also "long," and "close." The same may be said of *u*, open and close. But it must not be supposed that this convertibility is universal. In modern Italian, and in modern Greek, the short *i* is not the vowel sound of "sin," but really the short of "seen," that is, a short close vowel. Therefore we have four variations of *i*; short open, the English *ĭ*; long open, in singing; short close, the Italian *ĭ*; long close, the Italian *ī*, and English *ēē*, which are the same. We need not doubt that the Graeco-Italian long *ī* also was the last sound: but what was the Graeco-Italian *ĭ*? The only evidence that can be adduced, is the modern pronunciation of each language; in which there is no appearance of any variation.

Such arguments do not commonly carry much weight. When we find so much change taking place in the vocalism of a language in a few hundred years, how much greater changes may reasonably be expected to have occurred between the first centuries of the Christian era and our time? Constant change is the normal state of language: and absolute agreement of ancient and modern sounds is almost a suspicious circumstance. Yet here we may perhaps give more weight than usual to the evidence, for this reason: close *i* is the very thinnest sound in language: the resonance-cavity behind the organs which produce it is the smallest possible for any vowel[1]. If therefore a vowel had once sunk to this sound, there was no further for it to go: it is therefore possible that the close *i* may have been reached even before our era, and so, except by some reversion of the natural order of phonetic change, it must have remained unchanged ever since: and it is in accordance with the early weakness of the Latin system that the vowel should soon sink as far as possible. The analogy however of the Italian *e* and *o* tends in the opposite direction. In Italian, open *e* and *o* represent *short* Latin *e* and *o*, with tolerable regularity: and close *e* and *o* represent Latin *ē* and *ō*. It seems to me therefore not possible to speak with certainty on the sound of Graeco-Italian *ĭ* and *ŭ*: but the sounds of *ī* and *ū* are fairly certain.

General rules of vowel strength.

The results of this description of the vowels, so far as they shew us the changes which we may *à priori* expect to find in any given language, may be very briefly stated. We cannot expect to find nearly so much accordance as we found in the general principles of consonantal change. The tendencies of phonetic and dynamic change (or of change, originally phonetic, but dynamically applied) cross each other: the creative power of language is still manifested in the vowels, long after anything but decay can be looked for in the consonants. It is therefore not possible to lay down even a general scale of vowel strength: the scale of the Graeco-Italian is very different from that of the Teutonic languages, and there are considerable differences between the Greek and Italian. All languages agree in deriving other sounds from the full *a* sound: but the order of the derivatives greatly varies. It is clear that *a* is the most likely vowel to be corrupted. The

Regular passage from A down each line.

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[1] It will be remembered that there is no difference between an open and a close vowel as far as the position of the tongue or lips is concerned; but the soft palate is lower for the close than for the open sound, and therefore the hollow of the mouth behind the tongue in which the air sounds—commonly called the *resonance-cavity*—is diminished for the close sounds.

check is applied to the voice, at the earliest point, after leaving the larynx. For other vowels, the check is applied at different points along the palate. Now, as the current of air loses more of its strength the farther it goes, we should expect the sounds to become weaker along the different lines to *i* and *u*. In other words, *ă* would naturally pass into *ĕ*, and then into *ĭ*: and the long vowels would be found in the same order, though with more probability of variation, from the very time required to produce them. If the sounds between *a* and *u* were simple sounds like those from *a* to *i*, the same rule would be expected to hold; *a* would become *o*, and *o* become *u*. But these are complex sounds; the lips, as well as the tongue, are concerned in their production: the small saving of muscular effort for *u*, at the back of the mouth, may be neutralised by the greater action of the lips, and therefore it is uncertain whether *o* should pass into *u*, or *u* into *o*: it will depend upon each nation, which portion of the vocal organs shall be more exerted. But what we may call the natural scale of strength—that which is followed in the above account—was preserved by the Graeco-Italian race, very exactly by the Greeks, less perfectly by the Italians. In the Teutonic languages, the tendency is on the whole rather to change *i* to *e*, and *u* to *o*. These changes may be due to the fact, that the Northern nations allowed *a* to sink at once to *i* and *u*, instead of *e* and *o*, like the Southerns: when the necessity for distinctions of sound arose, they would be compelled to move backwards on each line. This is in harmony with the known changes of their consonantal system. For us, however, in our consideration of Greek and Latin etymologies, the natural scale is of importance.

No useful rules for passage from one line to another.

Few useful rules can be laid down to regulate the passage of a sound, from one line into the other line. For this we must depend on the observed facts of each language. Those languages, in which the vowel system is strongest, avoid such changes: they are exceedingly rare in Greek: in Latin, where the vocalism was weak, they are frequent. The change from *u* to *i* is decidedly the most common in all languages, and is in accordance with the nature of the sounds, the first being complex and also partly produced farther back in the mouth. The change from *e* to *u* is rare. I know no language in which *i* passes into *u*.

CHAPTER V.

THE INDO-EUROPEAN ALPHABET.

The Indo-European Alphabet exhibited in roots and words.

I NOW proceed to give examples of Indo-European roots and words, which have been deduced from the various forms in which they are found in the different languages according to their special phonetic laws. These words will prove the existence of the consonants already attributed to this language: and will convey a firmer impression of the actual existence of such a speech than a mere enumeration of letters or roots could do. It will be seen at once that in some languages (especially in the Sanskrit) some of the consonants have been so much corrupted that the identification of e.g. a common Greek and Sanskrit root, may not be obvious without some knowledge of the phonetic laws of Sanskrit, which would account for the variation. This difficulty is unavoidable and cannot be met here, because it does not come under my plan to give in detail the phonetic laws of any language except of the Greek and of the Latin. The different changes of the Teutonic languages will be shewn by the variations of the words given: a full account of Grimm's Law is given in the second series of Max Müller's lectures, and in Ferrar's *Comparative Grammar:* but for the sake of those who have not got those works, a simple list of the changes is given at the end of the chapter. The Gothic forms are valuable to us because Gothic is a Low German dialect, like our own: and the same consonants are commonly found in each. Several Anglo-Saxon forms have been given in order to facilitate the comparison of English words[1]. It must be remembered that the modern High German sometimes varies much from the older form. Lithuanian has been taken as the most important (for comparison) of the great Sclavonic branch of the North European family: but sometimes Sclavonic forms are given instead. I shall give the *regular* substitutes for each letter in each of these languages. The irregular merely sporadic variations of the Greek and Latin will come under our notice afterwards: those of the other nations do not concern us. I begin with the momentary sounds, and among them with the hard sounds[2].

I. *Momentary sounds:*
1. *Hard sounds.*

K.

(Ind.-Eur. *K* = Sk. *k, kh, ch, ç* = Gk. *κ* = Lat. *c, qu.* = Goth. *h, g* = O. H. G. *h, g* = Lith. *k, sz.*)

Thus the Ind.-Eur. root AK, expressing "sharpness," must be assumed as the root-form of the Greek *ἀκ-οντ, ἀκ-ωκ-ή* and *ἄκρος*, of the Lat. *ac-us, acu-o* and *ac-ies;* the natural transition to the idea of quickness is found in Sk. *āç-u,* Gk. *ὠκ-υ,* Lat. *ōci-us.* The root has been prolific in all the branches of the family: but in the North European there is some difficulty in distinguishing its derivatives from those of AGH. But we may attribute to it the A.-S. *egg-ian,* to incite, "egg" on: and *eher,* afterwards *eár,* our "ear" of corn: perhaps also *eglian,* to feel ill, or "ail." Prof. Curtius[3] seems to be right in combining the O. H. G. *hamar*—our "hammer"—with the Lith. *ak-men,* and the Sk. *aç-man;* each of which means a "stone," and the latter also a "thunderbolt;" and with the strange Greek *ἄκ-μον*, which commonly means an "anvil," but in Hesiod[1], the *χάλκεος ἄκμων οὐρανόθεν κατιὼν* can mean nothing but the "thunderbolt." If all these words, as is probable, though Prof. Curtius with characteristic caution declines to affirm it, are to be referred to the root AK, we see in the "hammer" and the "anvil" the development of the further idea of "hardness," whilst the earlier idea of "swiftness," hard entirely to be dislodged, lingered in Greek if but in the thunderbolt of Hesiod.

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[1] For these I am indebted to the Rev. W. W. Skeat, the well-known editor of *Piers the Plowman,* &c.

[2] Most of the following examples are taken from the second part of Curtius *Griechische Etymologie,* a most judicious and in every way admirable work, and from Fick's *Vergleichendes Worterbuch der Indo-Germanischen Sprachen,* the second edition of which (as far as the end of the first part of the second book) has just appeared at Göttingen. It is needless to add that numbers more may be found where these were taken from. The object of the present selection is to direct the curious to these interesting collections,

[3] *Gr. Et.* No. 3.

Very dissimilar in meaning is KI, the root of "quietness;" the ground-form of Sk. √*çi* to lie and of √*κι* in Greek; this simplest form does not occur in any word, but the first step in vowel-intensification is to be seen in *κεῖμαι* —not therefore a perfect in form any more than in sense, but a present form intensified in a rare though perfectly natural manner—in *κοίτη* a bed, and probably in *Κύμη*[2], in which case the *υ* would be a weakening of the radical vowel *ι*, more frequently found in Aeolic than in the other dialects; and if this derivation be true, it will be difficult to exclude *κώμη* and *κῶμος* from the same family. The certain Latin form is √*qui*, whence *quies*—but Prof. Curtius would derive also *civis* from the simpler root-form √*ci*. *Civitas* did not necessarily imply to a Roman residence in any *one* large town: and the antiquity of the use of this root to denote settled abodes—but not so much towns as villages—is shewn further by the Gothic *haims;* thus we find "haimos jah baurghs" used in Mark i. 38 to answer to the Greek *κωμοπόλεις*—the German *heim*, our *home* and *hām* as a termination: and in Lithuanian also *këma-s* is a village. It would of course be an entire mistake to conclude that "home" and its cognate words in the northern languages ever meant the "quiet peaceful place," natural as the association may seem. Only the Latin race seems to have developed the secondary meaning "rest," "peace," from a root which, like all others, had

[1] *Theog.* 722.

[2] *Gr. Et.* 134.

originally only a physical force—"to lie," and our "home" is (etymologically) nothing but the place where our forefathers settled or "laid them down." This obvious and important rule, that the derivatives of one language must be kept clear of the associations which cling to the derivatives of another—unless there is good evidence to shew that the derived idea was developed before the separation of the two peoples—is not always observed even by eminent philologists.

There is another root KI, exactly the same in form, with precisely the opposite meaning. From it come *κινέω* and *κί-νυ-μαι*; in Latin *cio* and *cieo, citus*, originally a participle, and *solli-citus*, "in entire motion." The simple root is seen in Homeric Greek, in the imperfect *κί-ον*. Neither of these two roots can be traced back to any simpler form, nor can any common original meaning be assigned to them from which the two meanings, to be quiet, and to move, can be plausibly derived. This fact may shew the need of caution in speculating on the earliest meaning of roots.

To pass from roots to words whose simple sense and similar form allow us to claim for them a common representative in Indo-European days, we find *k* in *kara*, the "head." This form is certain from the Zend *çara*—though the Sanskrit has allowed the *a* to pass into *i*, and kept only a secondary form, *çiras*—the Greek *καρα* and the Latin *cere-brum* the "brain." Ennius' well-known separation of this word into its two parts "head-bearing" (or perhaps "born") may, I think, shew that some sense survived even in his day of the first part having once signified the head, if we take into account the frequency of its occurrence in other (less obvious) compounds, as *crista* (= *cere-sta*) *ceruix* (from √*veh* to carry): in Sanskrit *ciro-dharâ* (i.e. *çiras* and the root *dhar*) exactly corresponds to *cer-vec:* compare also *çiro-ruh* the hair (from √*ruh* to grow): these undoubted compounds are strong evidence for a similar origin of the Latin words. Such tmeses were not likely to be used by old writers, unless the feeling of the word being a compound was vivid; compare *ordia prima* and *facit are* in Lucretius[1]. The second part of a compound or a derivative suffix attached to the original noun signifying "head" is the *n* in the Gothic *hvair-nei*, the German *Hirn* and *Gehirn*, and the Lowland Scotch *harns*, Old English "hernes," all meaning brains.

> Sum lay stareand on the sternes (stars)
> And sum lay, knoked out their hernes[2].

The same suffix *n* gives our "horn," Gothic *haurn*, Latin *cornu*, all with the same vowel change. *Karṇa* however in Sanskrit is an ear: and the Greeks formed *κερα-τ* by a different suffix, perhaps originally Ϝ*ατ*, as the *α* appears to have been originally long. This variation illustrates well the indefinite meaning of the suffixes: each new formation meant, apparently, "something on the head." So *ceruos* is "that which has something on its head," as the Greek *κέραος*, which was not used as a noun.

The "heart," also in Indo-European, in the form *kard*, kept nearest by Latin *cord*. It occurs in every Teutonic speech, with due modifications. Καρδ-*ία* is a secondary base. The Sanskrit *hṛid*, where both the *k* is weakened to *h* and the *r* to *ṛi*, may lead us to suspect that the earliest form was *skard*, which is itself a root meaning to leap; whence come the German *scherzen*, and perhaps *κόρδαξ* (i.e. *σκορδ-ακ*[3]).

A crab was apparently *karka*: this form occurs in no language, but is implied in at least three; in the Sanskrit *karka-ta*, in *κάρκ-ινο*, and in Scl. *rakŭ*, i.e. *krakŭ*. Hesychius gives *κάρχαι* = *καρκίνοι* as Sicilian. The labial in our northern languages shews either a different suffix or dissimilation: we do not find labialisation in the North. "Crab" and "cancer" shew the wide modifications of sense, as well as of form, which the same word may take in coming to us by different roads. "Crayfish" has been already mentioned.

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[1] IV. 28, VI. 962.

[2] Laurence Minot, in Morris's *Specimens*, p. 187, ll. 67, 68.

[3] Fick, 37 and 207.

Ka denoted "who" in Indo-Eur., and was retained unaltered in Sanskrit and Lithuanian: it was changed, probably through the same indistinct pronunciation, in Gothic into *hva* and Latin into *quo:* the Ionic alone in Hellas retained the primary form in κοῦ, κοῖος (= κο-*y*ο-ς), while the other dialects substituted π for κ. In Scotch we find *qu-hare* (= where): this return to something like the old form is curious; but the *qu* represents only a stronger breath than *w*, not a shut sound; and is probably to be explained as a result of the strong Keltic tendency to gutturals, shewn in the pronunciation of English words by a people which doubtless contains a strong Keltic element.

Lastly, *katvar* must have been the primitive form from which through many changes, some of which will come before our notice later on, came the Sk. *chatvâras,* the Gk. τετϝαρες (a form which does not occur, but is necessary to explain the dialectical variants τέσσαρες and τέτορες), the Lat. *quatuor,* Gothic *fidvor,* and Lith. *keturi.* It will be observed in both the last examples that a majority of the derived languages exhibit a labial sound, which either occurs after the guttural (as *v* or *u*) or has altogether driven it out of the field, remaining itself as *p* or *f*: and the *ch* in *chatvâras* must have been produced by some consonant following after the original *k.* These facts go far to shew that this subsequent labial was Indo-European, as is asserted by Leo Meyer[1]. Its origin will be discussed hereafter when I speak of the phonetic effects of indistinct articulation, to which, on the analogy of many modern languages, I believe it to be due.

T.

(Indo-Eur. *T* = Sk. *t*, *th* = Gr. τ = Lat. *t* = Goth. *th, d* = O. H. G. *d* = Lith. *t*.)

A very important root is TA, strengthened probably in very early times to TAN: the stronger form is found in all the branches of the family. Thus we have in Sanskrit √*tan* "to stretch," though the past participle *ta-ta-s* is to be referred to the older and simpler form. The Greek has √*τα*, √*ταν*, and √*τεν* preserved in *τά-σις*, *τέ-ταν-ος* and *τέν-ων* respectively. So also in Homer we find an imperative *τῆ*[1], in the sense of holding, found likewise in *teneo*. The simple idea has been very generally retained: *τείνω* and *tendo*, the Goth. *thanja* and Lith. *tempju*, all mean "I stretch out," or "extend." Various secondary significations are found—in *τάναος*; in *tenuis, tener, tenax;* in German *dünn* and our "thin." The transfer to sound as something extended appears to be certain in *τόνος*, "tone" (Curtius compares the phrase *τείνειν βοήν*, &c.), and Sanskrit *tâna* (where the *ā*, as often, agrees with Greek *o*). But I am not so sure that *tonitru*, O. H. G. *doner* and our "thunder" should be referred to this root[2]. The Sanskrit *stanita* (with the same meaning) speaks strongly for a root STAN to sound, whence German *stöhnen*, and the Greek *στένειν*, all implying noise of different kinds[3].

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[1] *Vergl. Gram.* I. 29.

It is possible that *-tâti*, which is a very common suffix in Sanskrit, Greek, and Latin—*deva-tâti*, *νεο-τατι*, *ciui-tati*—may be a noun formed from this root TA by the suffix *ti:* which at first implied "stretching," "extension," and passed at last into the more general sense of "state," "condition." But it is equally possible that *tati* may be an amalgamation of two simple suffixes *ta* and *ti*, though the lengthening of the *a* is hard to account for. On the first hypothesis *ciui-tati* is a *compound*, i.e. a noun produced by the union of two nominal bases, like *usu-fructu*, &c., not a *derivative*, i.e. a root or base with a suffix[4].

A verb *tam* occurs in Sanskrit expressing breathlessness, exhaustion. A causal in Sclavonic means to press, annoy, &c. But in several languages a noun occurs meaning darkness, obscurity, Sanskrit *tamas*, Lith. *tam-sà;* in Lithuanian also *tĭma* is dark, and our "dim" is A. S. *thimm.* It seems highly probable that the Latin *temere* is an old case of this noun, meaning "in the dark:" and *tene-brae* may be *teme-bara,* "darkness-bringing," in which, as Curtius suggests, the following *b* has dissimilated the *m* to *n.* The mysterious rule of prosody in old grammars, "e in temere semper eliditur," may be explained by the discrepancy between its actual length (*temas* + *ê̗*) and the feeling in the Augustan age, that adverbs of this class should have their final *e* short. It would seem that the conception of night in *tamas* is "the disquieting season:" compare *nox* (from NAK, whence νέκυς, *nex, noceo,* &c.), and εὐφρόνη, which is probably as much a euphemism as the Euxine.

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[1] E.g. *Od.* v. 346.

[2] See Max Müller, II. 93. Farrar, *Chapters on Language*, 177. Curtius, *Gr. Et.* No. 230.

[3] See Benfey, *Sk. Lex.* s.v. *stan.*

[4] For a capital account of compound nouns in Latin, see Roby's *Grammar*, I. 378—396.

An especially large number of secondary roots cluster round the root STA, another very early root in which our consonant T occurs. It is found with singularly little change of form (it has become √*sthâ* in Sanskrit where *t* after *s* regularly passes into *th*) and none of meaning in all the derived languages: and the radical sense is also perceptible in nearly all the derivatives: thus στήμων is the "upright" of the loom: *sta-bulum,* the place where cattle stand, &c. But there are numerous derivatives, less obviously connected with the idea of standing, from the secondary roots,—all Indo-European—STAL, STAV, STAMBH, &c.—STAL is affirmed by the Gk. στέλεχος, our "stalk," the German *stiel,* our "stall," and provincial "stele," the handle of a pitchfork; in στέλλω the sense is apparently causal, and *prae-stol-or* is "I place myself in front of another;" the etymological sense however being so far lost that in the earliest times we know the verb is found with an accusative: and it was probably a revival of the feeling of the derivation that connects it with a dative in the writings of Cicero. From STAV[1] we have σταῦρος, and

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[1] Curtius, *Gr. Et.* No. 217.

stiua: the Homeric *στεῦμαι* seems to connect itself with this root more naturally than with any other; as in *Il.* III. 83, where Hector *στεῦται τι ἔπος ἐρέειν*, "is steadfast to speak;"—the meaning found in Sk. *sthâvara* and the Gothic *stiviti*, "endurance." The derivatives of STAMBH are not easy to distinguish from those of a simpler form STAP, which has furnished Sanskrit with the causal of STA and is the base of the Latin *stipare*, of the German *Stift*, and of our "stub;" but the stronger form is seen in Sk. *stambha* a "post," Gk. *στέμφυλον*, pressed olives or grapes, and German *stampf* and *stampfen*[1], our "stump" and "stamp." The primary meaning of STAP would seem to have been to "cause to stand," or "support:" that of STAMBH to "press"—but the close resemblance of the two forms as well as of their meanings has caused confusion in several of the derivatives, e.g. *ἀστεμφής*. The cognate words *στίβος*, *στείβω*, *στιβάς*, *στιβαρός* "stout" (in the sense of being close pressed), *στοιβή* "stuffing," agree in sense very well with STAMBH, but do not agree exactly in form with either root. I should classify them under a secondary STIB, formed through a weakened STI: compare TRIB from TAR[2]. With them may go our "step." The Latin *stupor* and *stupere* might very well be connected with STAP, as expressing that which causes a man to stand. The rare Homeric words *τάφος*, wonderment, and the participle *ταφών*, amazed, are often referred to the same root[3], in connection with *stupor*. In this case we should have to suppose that the initial *s* changed *τ* into *θ*—*sthap*—and then fell off, leaving *θαπ*, which occurs in *τέ-θηπ-α*, and by the ordinary Greek change could become *ταφ* when required. But the Greeks had no dislike to the combination *στ*; witness the numerous words where it is initial: and therefore I think it more likely that *θαπ* was a secondary root from √*θα*[4]; and that it is found nasalised in *θάμβος*.

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[1] *Gr. Et.* No. 219.

[2] p. 42.

[3] As by Fick, 210.

[4] See p. 126.

The very remarkable root TAK is admirably described by Prof. Curtius[1]: it has varied in some derived languages into *√tek* and *√tok:* and it has also a by-form TUK, occurring both in Sanskrit and Greek, and another by-form *√tik,* found however only in Lithuanian; and yet three apparently distinct significations, to "beget" (e.g. *τεκεῖν*), to "hit" (*τόξον, τυχεῖν*), and to "construct" (*τέκτων, τύκος*), are found in the first two languages indifferently expressed by the three forms, and in Lithuanian all by modifications of *√tik.* I should be disposed to think that the main forms, *tak, tik, tuk,* are all Indo-European, and probably each at first had its own meaning; but that the formation of several derivatives, very similar to each other in sense, from the different roots, led to confusion between those roots in the very earliest times.

P.

(Ind.-Eur. *P* = Sk. *p, ph* = Gr. *π* = Lat. *p* = Goth. *f, p* = O. H. G. *f, v, b* [the latter in the middle of a word] = Lith. *p*.)

A root which has played a large part at least in the Greek and Latin languages is PAR. It is Indo-European, for it occurs, though not often in Sanskrit, in the sense of "bringing over," only Vedic[2]: also in the Gothic *farjan,* with the same sense, the German *Fahrt* and other words, and our "wayfarer." But it is in the Greek and Latin that this root has been most fertile, and produced the largest variety of meanings. The sense of Sk. *piparmi,* and Gothic *farjan,* is found in *περάω,* so common in Homer[3], for "carrying over sea for sale;" and this connecting link justifies us in connecting with this root *πιπράσκω, πρίαμαι, ἔμπορος,* and others. We find however *√paṇ* (i.e. *par-n* = *πέρ-νη-μι*) in Sanskrit with the same sense, where the sea does not help us: the primary idea of a sale may have been no more than a passing over from hand to hand.

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[1] *Gr. Et.* No. 235.

[2] Benfey, *Sk. Dict. s. v.*

[3] *E.g. Od.* xv. 453.

The simple idea of "crossing" is found in *περάω* used as a neuter verb, *πόρος*, *πορθμός*, &c., and our "ferry;" *portus* and *porta* are also purely local: *πεῖρα* (for *περ-ya*) and *periculum* mark the transition to the world of abstract conception, and *ἔμπειρος* and *peritus* are applied to the man who has "gone through" many things.

This PAR must be kept distinct from another root, identical in form, but quite dissimilar in meaning, to "fill." From this come *πίμπλημι*, *πλῆθος*, the Latin *plenus*, probably *plebs* (secondary); Sanskrit *pura* a city and *πόλις*. These last two, however, are formed by different suffixes: the Indo-Europeans seem to have had no word for a city: and this first conception of "a full place," among the Hindus and Greeks, does not imply strength, or fortification. No such "strong place" is to be assumed from Gothic "baurg," our "burg," and *πύργος*: the two do not correspond; *baurg* is equivalent to the Greek *φραγμός*[1]: *πύργος*, which is isolated in Greek, is perhaps a borrowed word; compare the Trojan Pergama. PAR, in the sense of "putting forth," "giving," in *pario*, perhaps *parentes*[2], *pars*, *ἔπορον*, &c., may be a secondary application of this root, or may be a distinct third form.

There is a root SPAR, expressing quick jerking motion, which appears in a very curious number of different forms in Greek and Latin, due to the difficulty of the original combination of sounds. *Sp* seems to have been felt a more difficult compound than *st*; these two sounds are produced very near together in the mouth: in fact, the point of the tongue has merely to be slightly raised, after sounding *s*, to produce *t*; there is no other change in the speech organs: but for *p*, the lips must be put into action; *s* and *p* are widely separate. Accordingly *s* was either dropped (as in many languages) from initial *sp*, or aspirated *p* into *ph*, thus diminishing the strength of the *p* contact: but while *sp* remained, this heavy consonantal compound, ending with a labial, had power to change the vowel *a* to the more labial vowel *u*—a process which will be afterwards seen very distinctly in Latin. Lastly, in this root, as in many others ending with *r*, the *r* could pass into *l*, whether before or after the separation of languages is, as we have seen, uncertain. We thus get, beside SPAR, the by-forms, SPHAR, SPUR, SPAL, SPHAL, PAL. This variety of form may seem surprising, and some persons may prefer to assume separate roots. But there is no change above which is not regular, and supported by many unquestionable analogies: and the primary meaning is very closely kept in the derivatives[1]. Nearest to the simple form we have *σπαίρω*, or the common *ἀσπαίρω*, where the prosthetic *a* is another attempt to avoid the difficult initial compound; and *σφαῖρα*, a thing jerked or thrown. In the first of these, the motion is of the whole body: *sperno* (originally physical in sense, as is seen in Plautus' favourite combination, *segrego sperno*, but more clearly in *aspernor*) and *spurius*, and our "spurn," must be put with German *spur* a track and *sporn* a "spur," and *spurnan* O. H. G. to kick, perhaps also *σφυρόν*: and from this comparison we shall be justified in assuming with Curtius, that motion with the foot must here be understood, while in *σπείρω* we certainly have jerking with the hand: and the causal in Sanskrit signifies drawing a bow. In the by-form SPHAL we seem to have the feet again, e.g. in *σφάλλω*, to trip, and *fallo*, in both of which however the sense is nearly always metaphorical: for the loss of *s*, in the Latin, compare *fides*, by *σφίδη*; *funda*, by *σφενδόνη*; *fungus*, by *σπόγγος*. In Graeco-Italian we have PAL, as well as SPHAL, indeed more commonly; e.g. *πάλλω*, to leap or quiver, of the whole body, like *ἀσπαίρω*, and (causally) to brandish; also *πάλλα* a ball: in Latin we have *pila*, and the old verb *pollere* (*pila ludere*, as Festus explains it). In *πα-σπάλ-η*, or *παιπάλη*, we seem to have SPAL doubled, to express the constant tossing about of winnowed corn: in

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[1] *Gr. Et.* No. 413.

[2] = *οἱ πορόντες*, *Gr. Et.* No. 376.

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[1] See *Gr. Et.* No. 389; Corssen I. 526; and *Krit. Beiträge*, 308.

Latin, *pollen* is only the dust which flies about in the mill; and generally the root in Latin is applied to the refuse, not the part selected: *palea* is chaff; and *pulvis* seems to belong to the same root. Many more words apparently akin might be given here, but it is better to stop at what seems certain. There is much danger to the etymologer of being led on by analogy—the meaning following through gradually diverging forms—till at last he is landed in the derivatives of some entirely different root.

An Indo-European preposition *apa,* "off" (also=from), may be pretty confidently assumed as the basis of Sk. *apa,* Gr. *απο,* Lat. *ab* (when the final *b* is weakened from *p,* as in *ob,* Gr. *ἐπί,* Sk. *api*), Goth. *af,* German *ab* (in which changes Grimm's law is justified), the Scotch *aff* and our "of," now written "off," for the sake of distinctness. It is also preserved frequently in our initial *a*: "ago" is A. S. *af-gân:* "adown" is *of-dune* (from a hill): though *a* sometimes represents *on* as well, e.g. "aloft" is "on the lyfte" (air), "asleep" is "on sleep." In most other prepositions there is so much variety both in sound and sense in the different languages that identification is very difficult and uncertain; as indeed was to be expected from the wear and tear by constant use of such small words. But this seems to me one of the strongest reasons for rejecting the ingenious theory of Pott—at least in the wide application which he gives it—that numberless roots and words are formed out of primary roots preceded by a mutilated preposition in composition with it. Relying on the unquestionable fact that such mutilation is found extensively in Sanskrit words and even roots—thus, for example, it can hardly be doubted that √*dhyai* "to think" is from *adhi+i,* "to go over" on the analogy of *adhi-gam* "to go over" or "read," and that √*tyaj* to "leave" is from *ati+aj,* to "cast over" or "away,"—relying also on the fact that this principle of corruption has undoubtedly operated in modern languages: thus e.g. "bishop" has been cut down from ἐπίσκοπος; and "pistola" is the modern Italian for epi-stola; on this

(Pott's theory of secondary roots—formed from primary roots by a preposition which was afterwards mutilated.)

evidence he throws this process back to Indo-European times. The lawfulness of this method has been strongly denied by Prof. Curtius[1],—principally on the grounds that such analytical formations of words are foreign to the character of an early people: and that as a matter of fact the connection between a prefix and verb in the oldest time was not so intimate as to combine them together into one word, the slightness of the connection being felt even after the separation of languages, as is proved by the agreement of the Greek and Sanskrit in placing the augment and the reduplicated syllable *between* the prefix and the verbal base. To these and other arguments Pott replies[2] with great animation, and I think with some success. But his method is more open to objection when he applies it to the derivation of isolated Greek and Latin words, where there are cognate derivatives from the suffixed root, and where the preposition itself is somewhat dubious. We may grant the great probability and wonder at the ingenuity of such derivations as πιεζω from ἐπι+εζω "I sit upon[3];" of φιδίτιον the Spartan word for the common meal from φιδίτης i.e. *assessor*, from ἐφίζω for ἐπι-ιζομαι[4]; and admit even the possibility that πίθος, a "wine-jar," may be from ἐπί and √θε, "to set upon;" because in all these and many other cases our analysis leads us to a preposition which we know to be a Greek preposition, and to roots which are Greek roots. But the case is very different when Prof. Pott derives, for example, the Latin *piscis*[5] from the Indo-European preposition *api* which is the Greek ἐπί, and a root *chhad*, which is purely a Sanskrit weakening of original SKAD, whence comes the Gothic *skadus*, Germ. *schatten*, or "shadow." SKAD meant to cover, and *piscis* is supposed by Prof. Pott to be the "over-covered" with scales, the *squamigerum genus* of Lucretius. This, of course, is possible; but the derivation lacks every element of certainty. The preposition *api* is generally supposed to appear as *ob* in Latin: but this is very doubtful, and in any case the form *ob* would not suit the present derivation: and the existence of *skad* in Latin can scarcely be assumed as certain from a possible derivative *castrum* for *skad-trum:* while a simpler form SKI, which would certainly be much more suitable for our need, and which does appear in the Greek *σκιά*, does not seem to have any representative whatever in Latin. We must then deem this derivation, together with many others of this most ingenious etymologist, to be "not proven."

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[1] *Gr. Et.* 32.

[2] *Et Forsch.* II. 320 et seqq.

[3] *Ib.* I. 514.

[4] *Ib.* I. 572.

[5] *Ib.* I. 515.

G.

2. Soft momentary sounds.

Ind.-Eur. *G* = Sk. *g, j* = Gr. *γ* = Lat. *g* = Goth. *k* = O. H. G. *k, ch* = Lith. *g, z*.

Turning now from the hard to the soft consonants we find that G occurs in some of the most important roots of the common speech. Examples are hardly needed to shew the extent to which the roots GA and GAN to "produce" have spread their branches through every language of the family. In all of these the radical meaning is plainly discernible. But it is remarkable that not only GAN but also the closely connected form GNA to "know" can also be traced through all the derived languages, and there can be no doubt that the Indo-Europeans had definitely separated the two roots to denote one the physical, the other the mental operation. GNA appears as √*jnâ* in Sanskrit, √*γνω* in Greek, and √*gnā* (*gnarus*), √*gno* (*gnosco*) in Latin; in all these we see the long vowel, which however may be only accidental similarity: the Sclav. *znati*, the O. H. G. *knau* and our "know," agree in keeping the vowel after the compound consonant: in A. S. also *cennan* is to beget, and *cnáwan* is to know; so also our "know:" but in early English we get "knowe" in the ordinary sense, and "kenne" to make to know, or teach: and "ken" is the regular form for knowing in Scotland; and the Gothic *kunnan* and modern German *kennen* show that the difficulty of the sound led to transposition of the vowel; while it commonly caused the loss of the first consonant in Latin, as in *nomen*, *narrare* =*gnari-gare*, &c. (except in compounds, as *i-gnobilis*), and among the Greeks it produced a prosthetic vowel, as in *ο̆νομα* for *ο̆-γνο-μα*[1].

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[1] Not *γονομα*, as Prof. Key thinks we are driven to assume, in his attack on the "prosthetic vowel" (*Philological Soc. Trans.* 1862-3, p. 155). Granting the occurrence of the older and simpler form *gen* in the instances given in the text, and even the Erse *gen* (to which Prof. Key has courteously referred me), I still think that these older forms used in the later and derived sense are best accounted for by the hypothesis that the difficulty of the new sound caused a return to the older one. It would seem moreover that even in Old Irish *gné* is "reason," and *itargninim* is "I am wise" (*Celtic Studies*, p. 110): here then we find the later form. Now if *gen* had been the original form for "knowing" in Erse, it is not conceivable that the more difficult form *gna* should have been afterwards adopted.

In the article above referred to, prosthesis is dwelt upon as one of the enormities of the "German School of Linguistic Science." No doubt the principle may be applied too often; but surely Prof. Key himself would not deny the existence of such euphonic vowels, which will be discussed in a later chapter. His derivation, however, of *ὀφρύς* from *οπ-φρυ*= "eye-brow" on the analogy of *ὀφ-θαλμός*, instead of regarding the *ο* as prosthetic, is ingenious and certainly possible.

Prof. Key's Essay contains much that every philologist must sympathise with, who does not believe Sanskrit to be the one guide to philology, and Sanskrit forms to be the ultimate forms. In this I quite agree with Prof. Key. Thus he justly ridicules the enormous list of roots found in Bopp's Sanskrit Lexicon, to each of which is assigned by Indian grammarians the idea of "going." But no sound philologist would now take one of these mysterious roots and apply it at random to the derivation of some isolated word in another language which may contain no other trace of the root in question. These roots are at best only Indian, and it is quite possible that further investigation of the Sanskrit may lead to differentiation of the meaning of such of these roots as are real roots, and not the invention of Indian grammarians, just as in Greek we can distinguish shades of difference between the roots √ι, √βα, √ἑρπ, &c., all of which have the general signification of going, but, originally at least, of going in a particular way. No doubt in Bopp's Sanskrit Lexicon there is no discrimination between these roots; and Bopp and his immediate followers may have employed them unwisely in etymology. Further, no doubt many of Bopp's speculations as to the origin of suffixes are pure speculations, and though perhaps as probable as any other, yet essentially incapable of verification. But why does Prof. Key consider all the labours of the "German School" to be summed up in the hypotheses of Bopp? Apparently because Max Müller has said that Bopp's Comparative Grammar "will form for ever the safe and solid basis of Comparative Philology." This may be the slightly exaggerated expression of reverence for the Newton of linguistic science—though it is certainly true of the grand principle of affinity of languages which Bopp was the

From GAN come two nouns *ganâ* and *gâni*, which have been kept in the main very distinct in the derived languages with a perceptible difference of meaning. Thus from *ganâ* we have *γυνή* and Gothic *quinô*, A. S. *quënâ* and our "quean," all terms for a woman, and not on the whole respectful terms: *γυνή* perhaps is an exception; it is certainly used for a wife in Greek, but was probably more homely and less polite than *ἄκοιτις*, *ἄλοχος*, or *δάμαρ*. Now from *gâni* we get Sk. *jâni* (at the end of compounds) meaning a wife, Gothic *quens* a wife, A. S. *cvên*, also a wife, and our "queen," *the* wife of *the* man of men. I do not know to which the Norse *kona* should be assigned: *kone* in Norwegian is a wife. There is no reason for any difference of meaning perceptible in the original forms; each probably meant simply one who can bear children. But words are like living beings: "some grow to honour, some to shame."

The antiquity of the names for the parts of the body is not surprising: we have seen "heart," and "head," already. So *gânu* is evidenced by Sk. *jânu*, *γόνυ* and *genu*, Goth. *kniu*, Germ. *knie*, and our "knee."

In Sanskrit *go* is a "cow," which by labialism has become *βοῦς*, and *bos*, A. S. *kô*, and German *kuh* (from an older form *chuo*). In Sanskrit, *go* is also the earth: and corresponding to this we have *γῆ* in Greek: the Gothic *gavi*, a province or district, and the German *gau*, as in Rheingau, our *-gay* in Hilgay, Gamlingay, &c., cannot be brought in with any certainty, because Grimm's law would be twice violated without any assignable cause. Yet the resemblance is sufficiently close to excite some surprise. Was the commonest term for the earth, at least in India

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first definitely to establish. But certainly Prof. Max Müller does not ignore the modifications, extensions and corrections of Bopp's theories which have been effected by the labours of men like Benfey, Curtius, Corssen, Schleicher, and hosts of other German scholars. And to regard Bopp as the final authority of the "German School" on all questions of language seems to me much the same as it would be, in a review of the discoveries of physical science, to disregard all later investigations, and to regard all scientific questions as bound up with the corpuscular theory of light because Newton *believed it*.

and Greece, if not universally, only a metaphor, the cow of plenty, as it is actually explained in India? and such metaphors are sufficiently common there to let us pass this without surprise: but they are foreign to the Greek genius, and do not seem likely to have been Indo-European. If so, we must assume that the resemblance between *go* and γῆ is accidental: which perhaps is safest. The oldest form of γῆ seems to have been *γϝα+yα*: by dropping both spirants *γα-α*, i.e. *γᾶ* or *γῆ*, is left: if the ϝ be dropped, and *y* vocalised, we have *γαῖα*: if ϝ forced out the γ we get *ϝαῖα* or *αἶα*: if it was vocalised, and *y* dropped, we get *γύα* or *γύη*[1].

The presence of G in an Indo-European noun *bhaga* is probable from the Gk. *φηγός*, Lat. *fagus*, German *buche*, our "beech," the Gothic *boka*, a "book," and A. S. *bóc*, at once a book and the beech, the tree which supplied the material. There is no Sanskrit equivalent; therefore the antiquity of the word cannot be called certain. That the word has different meanings—in Greek the "oak," in Latin and Teutonic the "beech," is well known. The reason has been discussed by Prof. Max Müller in a very interesting appendix to the fifth Lecture of his second series. He ingeniously suggests that "the Teutonic and Italic Aryans witnessed the transition of the oak period into the beech period, of the bronze age into the iron age, and that while the Greeks retained *phēgos* in its original sense, the Teutonic and Italian colonists transferred the name as an appellative to the new forests that were springing up in their new home." The great antiquity thus claimed for the Aryan settlement in Europe of course seems at first (as it seemed to Prof. Max Müller) to condemn this theory: but really we know nothing of the date of the settlement, and cannot therefore disprove the hypothesis on that ground. But though it seems to me far from improbable, yet I think a simpler explanation of the difference is to be found in the supposition that at the time of the separation of the peoples the common name used by them meant simply "the tree," not necessarily the oak, as assumed by Prof. Max Müller: and that this name was then applied after the separation to the different trees which were either most common, or most useful to them, in their respective countries[1]. Analogous is the restriction of meaning of the Indo-European *drus*, our "tree," to the oak in Greece—though both in the Eastern and the North-Western families the word always kept its general sense. This gradual restriction of a general term to a particular meaning is one of the most interesting tendencies in language, modern as well as ancient: examples are plentiful in English, e.g. *undertaker, artist*, &c. are now restricted to one particular calling. So in Greek we have ποιητής: and a "maker" was a poet in old English also. In Attic ὄρνις was almost confined to the poultry-yard; while a "bird" with us suggests a partridge. A grocer (O. E. grosser) was a man who sold by the gross.

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[1] *Gr. Et.* No. 132.

D.

(Indo-Eur. D = Sk. *d, dh* = Gr. δ = Lat. *d* = Goth. *t* = O. H. G. *z, sz* = Lith. *d*.)

One of the most obvious roots in which this letter occurs is DA, "to give," though hardly any language but the Latin has retained the vowel unmodified. Thus the Sanskrit form is √*dā*, it being a principle of Sanskrit phonetics that no root shall end in short *a*; probably because the pronunciation of this vowel was so weakened in Sanskrit—it was sounded something like the *u* in our "sun" —that the root would have been too liable to corruption, if it had ended with so weak a sound. The Greek form is

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[1] The derivation of the name from the root BHAG contradicts no phonetic laws, and is sufficiently probable; but the connection between a tree and eating is not sufficiently close to warrant us in assuming the derivation as certain: besides, the root probably meant to divide before it meant to eat; which meaning it had in Greek only; so that we cannot argue from this secondary meaning: the Sanskrit √*bhaksh* is another secondary.

√*δο*, the Latin √*da*—the *ō* in *dō*(*ti*)*s*, *dōnum*, &c. may be due to vowel-intensification—the Lithuanian is √*du*. The Sclavonic keeps the short *a* unchanged: in the Gothic and German the root does not appear. It has not been fertile, in any language, of derivatives which express anything beyond the radical idea.

A more interesting root is DIV[1], which originally no doubt meant "to be bright," though this sense is not found in any derived language. In Sanskrit √*div* means to play—possibly a derived signification, or perhaps the two roots were originally distinct—but the original sense is retained in √*dyu*, where the *v* seems to have passed into the cognate vowel, and then *i* passed into its corresponding semi-vowel, the reason being probably that *v* could not easily be sounded before suffixes beginning with a consonant: whence e. g. *div-ti* passed into *dyuti*; compare *ὑπόφαυτις* from root *φα*F[2]. And a Sanskrit √*div* in the sense of brightness, is abundantly evidenced by the numerous Sanskrit words for "sky" and "day" derived from it,—*div-a*, *div-asa*, *div-ana*, *dina* (perhaps shortened from *divana*), &c. The same meaning "day" is found in the Latin *dies*, and compounds such as *nu-dius*, *biduum* (= *bi-d*(*i*)*u-um*); and the Lith. *dëva*. The conception of God as "brightness" is universal among the Indo-European peoples. Thus from this root and apparently with the same suffix come the Sk. *Deva*, Greek *Δι*(F)*ος*, Latin *Deus*, Lithuanian *Dëvas* and Norse *Tivorr*, the Icelandic *Týr* and A. S. *Tiw* (whence Tiwesday or Tuesday). As the word means "God," and that only, in all the languages, it seems more probable that the conception of Deity was primarily that of "the bright one," than that the word meant first "bright," then "the sky," and then, like the Sanskrit *Dyaus* (by one of those mistaken metaphors which, as Prof. Max Müller has shewn, lead to so much mythology), passed finally to the idea of God: indeed the distinction between the sky and God is at least as old as the old word for the "sky father," which parted into the Sanskrit *Dyaus-piter* and the Latin *Jup-piter.* Lastly, Prof. Curtius is probably right in attributing to this root the curious Homeric forms *δέατο*—"he seemed" (*Od.* VI. 242)—and *δοάσσατο* (*Il.* XIII. 458, &c.), just as δέελος (*Il.* X. 466), δῆλος, with the by-form δίαλος (= διϜ-*αλο*-ς), mentioned by Hesychius, are certainly from it: all alike have lost the primary sense of appearing brightly or clearly, and retained the general sense of appearing in any way. The affinity of the two verbs was recognised by Buttmann[1]; but he refers them to *δάω*—found in *δέδαα* and *δαῆναι*—to "teach" or "learn," which seems much less satisfactory.

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[1] *Curt. Gr. Et.* p. 213.

[2] Above, p. 43, note 1.

(*Generalisation of roots.*)

The process here assumed, by which a root with a meaning originally *special,* has in certain derivatives lost that narrower sense and retained a perfectly general meaning, is exceedingly interesting. It has been already mentioned[2]: and one of the most interesting chapters in Curtius' great work[3] is that in which he shews that the numerous roots by which the Greeks could denote the general idea of "seeing" (e.g. VID, VOR, SKEP, DRAK, LUK, and many others), meant all primarily to see or look in some very special way; and whilst one set of derivatives from each (including the simple verb) retained only the colourless meaning of seeing, others in each case remained faithful to their original sense. Thus *ἰδεῖν, ὁρᾶν, σκοπεῖν, δρακεῖν, λεύσσειν,* to a Greek all meant simply "to see:" and yet √Ϝ*ιδ* must originally have expressed seeing with some kind of recognition, whence √*vid* in Sanskrit and *οἶδα* in Greek and our "to wit" mean "to know:" √Ϝ*ορ* "to look with care[4]" retained its old sense in *ὥρα,* Latin *vereor,* and our "warden" and "wary:" √*σκεπ* "to look out eagerly" is still vivid in *σκοπός*: *δρακ* "to look bright" has its full force in *δράκων*: and a similar sense may have originally belonged to LUK (whence a strengthened stem *λευκ* gives us *λεύσσω* and *λευκός*), which gave the Latins *lu*(c)*men*, *lu*(c)*na*, and us our "light," Scotch "lowe:" but in Lithuanian the verb is to expect, "look out."

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[1] *Lexilogus,* p. 212. [2] Note to p. 108. [3] *Gr. Et.* book I. § 13.

[4] In the *Erlaüterungen,* (p. 152. Eng. trans.) Curtius connects with this radical diversity of meaning the actual employment of some of these forms in particular tenses only; e.g. √Ϝ*ιδ* as an aorist, √Ϝ*ορ* as a present, where the reason is clear enough; recognition is a momentary act, looking out warily is continuous. Again √*φαγ, ἔφαγον* (Sk. *bhaj*) is to divide, and so to "break bread," but √*εδ* (*εσθίω*) is to eat it. We cannot trace the difference in √*φερ,* √*ενεγκ,* or in √τρεχ, √δραμ.

From the root DIV mentioned above came *devar*, one of the numerous terms denoting relationship by marriage, which can be traced back to Indo-European times. It is unchanged in Sanskrit: it is *δαήρ*, and *leuir* in Latin, by a not uncommon change of *d* to *l*: it is Lith. *dëveris*, A. S. *tâcor* (apparently lost in English), O. H. G. *zeihhur*. It has been mentioned that √*div* in Sanskrit means to play—and hence *devar* might mean a playmate—if so, this secondary sense must be also Indo-European. The word would seem to have been restricted in India to the *younger* brothers of the husband; which would suit the above etymology: this is curious, for it would seem to point to very early marriages among the primitive people, as well as among the Hindus: if the bride were a child, the younger brothers of the future husband might be fairly called her "playmates." This peculiar kind of courtesy, by which all persons spoken of are represented as standing in some complimentary relation to the person addressed, is altogether Indian: but it was not probable that we should find it to be also stereotyped in words which became current throughout Europe. It seems a fair conclusion from the fixity of the less necessary terms connected with marriage, that the custom had long been firmly established in the primitive race[1]. The extraordinary number of such terms in a primitive people's language may seem surprising: it certainly cannot be attributed to the necessities of a high civilisation; and is probably due to a clannishness which regards all within a certain pale as important, all beyond as barbarian[2].

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[1] See Pictet, *Origines Indo-Européennes*, II. 331—375.

[2] Prof. Cowell tells me that the ridiculous poverty of our vocabulary

Curtius thinks that the difficult word *yuvan* (whence Sk. *yuvan* and the secondary Lat. *iuvenis* come, and with which Gothic *juggs* our "young" are connected) is from the same root. The meeting of the two semivowels *y* and *v* in the same root seems to him fully to account for differences of form. Fick objects that there is no loss of *d* before *y* in Sanskrit; which is a weighty objection: that *div* "to play" is not Indo-European; which however is not true if the above etymology of *devar* be accepted, and I know no other: lastly, that the sense does not suit; that *iuvenis* is a man, not one who plays: but this transition is possible.

The fact that the Indo-Europeans were not mere nomad shepherds but settled in fixed abodes, may be established by the appearance among so many of the peoples of the same word for a home. Thus *dama* is attested as the original form by the Sk. *damas*, Gr. *δόμος*, Lat. *domus*, and Sclav. *domu*: while the Gothic *timrja* a "builder," the German *zimmer*, and our "timber," are all probably akin. We cannot of course infer that the houses of that time were built of timber: rather timber was, in its primary signification, "building material."

B.

Original B ought, on the analogy of the other soft consonants, to be represented by Sk. *b*, *bh*, Gr. *β*, Lat. *b*, Goth. *p*, O. H. G. *f*, and Lith. *b*. But it is very remarkable that there are hardly any instances where a word can be traced in the required forms through even a few of these languages. There seems to be absolutely no instance where the Gothic *p* occurs so as to correspond to a Greek and

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in this respect calls forth the contempt of the modern Hindu; thus with us the same term "sister-in-law" is applied to a husband's sister, or a wife's sister, or a brother's wife, and is even extended to a husband's brother's wife, or a wife's brother's wife.

Latin *b*: almost every word that begins with *p* is borrowed from the Greek, and therefore corresponds to Greek *π*. *Paida* (a coat), the Greek *βαίτη*, may be an exception: the double change speaks rather for it: so that the original form would be *baita:* but we have no help from other languages. From this Grassmann concludes[1] that *b* (at all events as an initial sound) was not in use before the separation of languages (an exception being made in the case of some obviously onomatopoetic words, as Gr. *βλήχω*, Lat. *balo*, Germ. *blöke*, Sclav. *bleją*, our "bleat"), and that consequently the words found in those languages with initial *b* must have corrupted it from some other sound. This can be shewn of the Greek and Latin in a great number of cases, which will come under our consideration when I describe the phonetic laws of those languages at length. Thus (to take one or two examples) *βαρύς* was once *γϜαρυ-ς*, Lat. *gravis: βορά* was *γϜορα*, Lat. (*g*)*uorare:* in *βούλομαι*, *βελτίων*, and others, the *β* is a dialectical hardening, difficult to account for, of *v*, while the same hardening in *βρίζα*, *βρέχω*, &c. was caused by the following *r*: in *βροτός* and others the *β* is parasitic and sprang up between *μ* and *ρ* (*μροτός*), the first of which it afterwards displaced: lastly, initial *b* is sometimes a corruption of *bh*, as in *βρέμω*, and the Lat. *balaena*, where the Greek exhibits *φάλαινα.* There may be one or two exceptions: thus we have *buk* in Sanskrit to express the noise made by a lion or a dog: we have the *βύκται ἄνεμοι* of Homer[2]; *bucca* the inner cheek, *βυκάνη* better known as *bucina.* Fick[3] compares the German *pfauchen*, and a Platt Deutsch *pochen* or *puchen*, to make a noise, on the authority of Pauli: these instances would seem to point out a true root BUK, which was no doubt originally onomatopoetic, and that at a late time, but which yet ceased to be used as a conscious imitation of a particular sound, and therefore is as real a root (in the common sense) as any of which we have been speaking. Another root BARGH to "pluck," may be implied by *βραχύς*, *breuis*, Sclav. *brŭzŭ* (= quick), and our own word combined with German *pflücken*[1]. This indeed is singularly slight evidence for the existence of *b* in the original language. But Schleicher's pleas for it have weight[2], that it is assumed by the aspirate *bh*, which is later, and yet certainly Indo-European: and the improbability of its not belonging to the original speech, while it is yet found in all the derived speeches.

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[1] *Zeitschrift*, XII. 122.

[2] *Od.* x. 20.

[3] p. 132.

3. *Aspirates.*

From the hard and soft unaspirated momentary sounds or "checks," we pass to the aspirates. Here we find the assumed aspirates of the original speech are not represented in the derived languages with nearly so much regularity as we have hitherto found. The reason is to be found in the peculiar nature of the sounds[3]. Before however considering their representation, one or two points connected with them must be briefly discussed. Since the weak aspirates are found in so few of the derived languages—in no one European member of the family; and since the hard aspirates are found in Greek, are we justified in assuming that *gh, dh, bh,* are the original forms of the aspirates, and not *kh, th, ph?* This latter view is actually adopted by some philologists in order to avoid the obvious difficulty of deriving stronger from weaker aspirates: and this is by far the weightiest in the list of the arguments in its favour which are stated by Prof. Kuhn[4], and are answered seriatim by Prof. Curtius[5]. But this difficulty is at least in great part removed by regarding the aspirates as developeable into compound sounds, which act upon each other like all other combinations. This action will be seen when we treat of the Greek aspirates. If the final breath of the soft aspirates could pass into the closely connected spiritus asper, the change from *gh* to *kh* is simply an assimilation of the *g* by the *h*, just as *g* is assimilated by the *t* in *actus* (√*ag*).

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[1] *Ib.*

[2] Compare the following statement from Cleasby's *Icelandic Dict.* I. 49: "*B* represents *p* in Scandinavian roots, for probably all words and syllables beginning with *p* are of foreign extraction; and the same is probably the case in German and English and all the branches of the Teutonic (*Grimm*, III. 414): whereas in Greek and Latin *p* is the chief letter, containing about a seventh of the vocabulary, while *b* contains from one-seventieth to one-ninetieth only."

[3] As described at p. 60.

[4] In his review of Schleicher's *Compendium*, *Zeitschrift*, x. 302.

[5] *Gr. Et.* 391.

Did the original language possess hard as well as soft aspirates?

But may not both classes of aspirates have existed in Indo-European times, as both are found in the Sanskrit? Yet this theory will not entirely solve the problem, for the hard aspirates in Greek correspond generally to the soft aspirates in Sanskrit, and these soft aspirates are not likely to have been weakened forms peculiar to Sanskrit; still the change becomes at least less violent and extensive. This view has been very powerfully supported by Prof. Grassmann[1]. He points out that the soft aspirates of the Sanskrit are found in Keltic, Gothic, Lithuanian, and Sclavonic, as soft unaspirated letters: also in the same languages the hard aspirates of the Sanskrit appear as hard unaspirated sounds (except in Gothic where they are sometimes treated as the Sanskrit hards), but at all events they never appear as soft sounds. Each aspirated sound would seem to have simply lost its breath, but never passed from hard to soft, or vice versa. This difference, he argues, speaks for a different origin of the two classes. Similarly in Latin the soft aspirates of the Sanskrit appear as soft letters, or as *h* or *f*, though *f* is indeed generally a hard breath. Yet in Latin he believes it to have had a weaker sound originally, from its frequent interchange with *b* (as *fui*, but *ama-bam*, *rufus* and *ruber*), and from its being represented by the symbol of the Greek Digamma. In any case this *f* is found only at the beginning of words: and as a general rule the Latin represents the soft aspirate by a soft unaspirated letter. In Greek these soft aspirates appear regularly, as χ, θ, φ: but in any case where the aspiration is lost (e.g. *μέγα*, Sanskrit *mahat* for *maghat*) the representant is always a soft, never a hard letter—(thus pointing incidentally to the fact that the Greek aspirate even after the separation was at first a *weak* sound, though afterwards hardened)—while the exchange which we find in Greek between the hard aspirated and unaspirated letter, is mostly confined to the cases where the aspirate corresponds to the *hard* aspirate of Sanskrit: e.g. in Sanskrit we have the root *sphar*, to jerk, or vibrate[1], cognate to which is the Greek *σφαῖρα* and also *σπαίρω*, where there is no aspirate: and there is a considerable number of cases where the Greek and Sanskrit hard aspirate are found in correspondence, e.g. *οἶσθα* = *vet-tha*. From all this he concludes that the hard aspirates of the Sanskrit existed in the common speech, before the separation of Greek and Sanskrit. Did they exist still earlier? No information can be got from Keltic, Lithuanian, or Sclavonian, for in them the hard letters correspond to Sanskrit hard aspirated and unaspirated letters. But in the Gothic he seems to see a distinction between the Sanskrit hard and soft aspirates: namely, that Sanskrit *th, dh, t* = Goth. *t, d, th* respectively: thus the Sanskrit termination of the 2 sing. perfect, *-tha* (Greek *θα*) is in Goth. *-t*: the Sanskrit participle termination *-tas* = Gothic *-ths*: while in the cases—which are many—where this correspondence does not hold, and where *th* is found both in Sanskrit and Gothic, he holds the *th* to be a later development of the Sanskrit: which is indeed the principle which other scholars apply to explain the whole class of Sanskrit hard aspirates. On this evidence then from the Gothic he considers the hard aspirates to date back to the times before the first separation of languages.

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[1] *Zeitsch.* XII. 82, &c.

How then is the confusion in Greek of the two originally distinct classes of aspirates, which the Hindus retained distinct, to be explained? Prof. Grasmann[2] considers this phenomenon to be in accordance with the genius of the Greek language, which develops the vowel-system, but allows the consonants to decay[1]. Consequently the aspirates had a tendency to become all hard or all weak. After *σ* they were obliged to remain hard: in analogy with this, the weak aspirates at the beginning of words first became hard, whilst those within words remained much longer weak, but finally hardened also.

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[1] See p. 104. This question of course does not affect the relations there given.

[2] *Zeitschrift*, p. 99.

In all this there seems to me nothing impossible. The evidence indeed supplied by the Gothic is insufficient to carry back the hard aspirates to the times before the separation of the North-Western family of nations. But at least a strong *prima facie* case has been made out for their occurrence before the parting of the South-Western peoples. The question which is left to be decided is this: is the number of words containing a hard aspirate and common to the Greek and the Sanskrit—e.g. *κόγχη* = *çankha*—sufficiently great to force us to believe that they must have belonged to the common language before the division, and not developed in the different languages, after the division, from causes which acted equally on each? In the example given above there is no appearance of any such cause, and the difficulty of believing that the Greeks and Hindus separately aspirated the *k* is greater in this particular case than that of supposing that it was aspirated by their common ancestors. But in a large number of cases we may trace a cause which might easily affect both peoples, though not necessarily to the same degree: most important of these is an *s* preceding the hard letter; which we know produced numerous aspirates in Sanskrit after the separation, and which may therefore well have exerted something of the same power in Greece. This would account for coincidences like that between Sanskrit *sphal* and *σφάλλω*: perhaps even for the *θ* in

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[1] This decay indeed, at least of radical consonants, is more apparent than real. They are corrupted, undoubtedly, but with considerable regularity and are generally recoverable in some of the derivatives. See the account of Greek consonantal change.

οἶσ-θα: and other less obvious phonetic influences may well have acted in other places.

Prof. Curtius rejects Grassmann's hypothesis, though doubtfully, on the ground that such questions must be decided, not by comparison of a few isolated words in different languages, but by examining the consonantal systems of the languages as a whole: from which he sees that corresponding to the Greek hard aspirates there appear, as a rule, soft letters in all the other families: and he concludes that it is much more probable that the Greek aspirates should be isolated examples of strengthening soft original sounds, than that all the other languages should have weakened the original hard aspirates so completely as to leave no trace behind of intermediate *k*, *t*, *p*, through which in some cases at least they must have passed[1].

I shall now give the representatives of these sounds, which all are agreed in attributing to the early alphabet—the soft aspirates. In order that the substitution may be intelligible, I may be allowed to repeat that it is the separation of the breath from the momentary sound which operated in different ways upon the aspirates in Europe. Sometimes they became fricative letters—*h*, *th*, *z*, *f*, &c.—in consequence of the breath being strengthened: sometimes the breath was lost and the unaspirated consonant was left. Their history in Greece has been already alluded to, but will be more fully described in its place; it was different from that of any other European language. But everywhere in Europe, I believe, the sound developed itself into a real *compound:* and as such became stronger than the corresponding unaspirated letter: *g'h* became *g+h*. In India, on the other hand, and we believe in the original language, we have the true aspirate, *g'h*; which is weaker than the unaspirated letter, because based on a less complete contact.

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[1] *Gr. Et.* 392.

GH.

(Indo-Eur. *GH* = Sk. *gh*, *h* = Gr. χ = Lat. *h* (initial), *g* (medial) = Goth. *g* = O. H. G. *g*, *k* = Lith. *g*, *ž*.)

There has been little change of meaning, though much apparent change of form, in the derivatives of VAGH to "carry." It is the Sanskrit √*vah* (where as constantly in Sanskrit the *h* seems to have driven the media out of the field), the Greek √Ϝεχ (distinct from √σεχ, whence ἔσχον), Lat. √*veh* (where the *h* must still have had some guttural sound, or it would not have assïmilated itself to a subsequent hard, as in *uec-tum*, &c., and therefore differed from the *h* which the Romans took from Cumae with the Greek alphabet, where it was a weakening from spirants, not aspirates), Goth. √*vag*, Lith. √*vez*. A carriage is *vah-ana-m*, ὄχο-ς, *uehi-culu-m*, *vež-ima-s* (each of the four languages forming the noun by its own peculiar suffix), the German *wagen* and our "waggon" and "wain:" and *uia* (= *veh-ya*), Gothic *vigs*, denotes a "way" in two of the languages: ὄχλος and *vah-a-tî*, a Sanskrit word for a river, have no parallels in the other languages[1].

The Greek base χάμα, shewn in many cases which in consequence of the loss of the nominative are called adverbs, e.g. χαμαί, χαμόθεν and χαμᾶθεν, χαμᾶζε, &c., the Lat. *humus*, the Lith. *žéme* land, with Zend *zem*, shew an original *gham* or *ghama*, meaning earth. From this comes apparently *ghaman*, an inhabitant of the earth. It is the source of *homo*(*n*), of Lith. *žmů*, of Gothic and A. S. *guma*, Norse *gumi*; whence German *braütigam*, Norwegian *brudgom*, our bride"groom[2]." The *r* is curious: it is probably due to that in preceding syllable, which was itself fluctuating: when "bird" passed into "bride," the *r* may have arisen after the *g*, either by assimilation, or as a sort of compensation to the latter part of the compound for the removal of the *r* sound to the beginning. The possibility of this would be increased by the loss of the simple word in ordinary use: then the phonetic process would be helped on by the striving for clearness of meaning, shewing itself in finding a derivation for a word which clearly demanded one.

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[1] *Gr. Et.* No. 169.

[2] Fick, 359; *Gr. Et.* No. 180.

The colour "green" is denoted by words so obviously identical in the derived languages that we must refer them to a common origin, a root GHAR; which however is probably distinct from the root of the same form expressing "desire" or "pleasure" which occurs in the Greek *χαίρειν*, Latin *gratus*, German *gierig*, and our "greedy[1]." Thus grass is *χλόη*, and *žole* in Lithuanian: and vegetables are *holera* in Latin and *zel-ije* in Sclavonic, English "colewort" and "sea-kail:" and "grass-colour" is in Sanskrit *hari*, Greek *χλωρός*, Latin *hel-uos*, O. H. G. *grôni*, our "green[2]." *Giluos*, though agreeing in meaning, seems to belong to another root: whence also our "yellow;" the two colours easily pass one into the other. This same root GHAR, according to Curtius[3], gives us *χρυσός* (for *χρυτ-yo*-s, original *ghart-ya*). Gold therefore was yellow to the Indo-European eye, not red as in our old ballads. The same word had a worse fate in Latin where it became the yellow dirt, i.e. *(h)lut-um*. It is the Gothic *gultha*, and our "gold." Fick[4] would also connect with this base the word *rutilus*: this would agree with the application of the word to yellow flaxen hair; *ruber*, I think, is not so used: and it avoids the difficulty of three different letters being found in derivatives of the same base, *ruber*, *rufus*, and *rutilus*: Corssen however explains the last as being *rud-tilus*[5], and derives them all from RUDH.

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[1] Prof. Max Müller assigns to this root the original meaning of "fatness" (*Lect.* II. 381), Prof. Sonne "light;" and no doubt pleasure is a secondary idea derived from one of these or some other similar notion. The derivation of the Indian "Harits" and the Greek Χάριτες from this root (*Id.* II. 369) seems to me very probable.

[2] *Gr. Et.* No. 197.

[3] No. 185.

[4] p. 69.

[5] I. 369.

Our ancestors would seem to have been troubled by snakes: they had formed from the root AGH (= to choke) the noun *aghi* to denote the reptile[1]. This appears in Sanskrit as *ahi*, in Greek as *ἔχι-ς*, Latin *angui-s* (where the radical AGH has, as always in Latin, been strengthened by the nasal; compare *angor, angustus, anxius*, &c.), and Lith. *angi-s*. The O. H. G. *unc*, an adder, does not shew the same suffix; *ἔχι-δνα* has sunk to the latter signification: and *ἔγχελυς* an "eel" apparently reminded the Greeks of the original snake, but, as we know from Aristophanes, carried also with it more pleasant associations. The same root gives *ἄγχω*, and *ἀγχόνη*, and the adverbs *ἄγχι* and *ἀγχοῦ*: all these have the primary sensuous meaning: but *ἄχος* is abstract, and so are the secondaries *ἄχ-θ-ος* and *ἄχ-θ-ο-μαι*. The Anglo-Saxon recalls the Greek in *ange*, vexation, and it has the curious prefix *ang*, meaning difficult, in compounds. One is *angnaigl*, a sore under the nail, in old English *agnail*, and now commonly (by mistaken etymology) "hangnail." *Egeo* and *ind-igeo* are probably also connected.

DH.

(Indo-Eur. *DH* = Sk. *dh* = Gr. *θ* = Lat. *f* (initial), *d* (medial) = Goth. *d* = O. H. G. *t* = Lith. *d*.)

This letter is found in many rather curious and interesting roots. One of these is DHA, to "milk"—to be distinguished from the same combination of sound which means to "place," and becomes in Greek the important root *θε*. Of course it is quite possible that the idea to "milk" may have been expressed simply by saying "to place to the breast:" but this is quite uncertain; the two ideas may have been originally represented by very different combinations of sound which at a time beyond the reach of our investigation, and by the operation of laws which we cannot discover, became identical. At all events for etymological purposes they are practically distinct roots: the derivatives of the one must be kept distinct from the derivatives of the other. In Greek DHA (to milk) is always found with the vowel long, agreeing in the main with Sanskrit in this respect. Thus it occurs in the rare verb *θῆσθαι*[1], and in the same neuter sense as it has in Sanskrit: but in one of the Homeric Hymns[2] it has the active sense which I imagine to have originally belonged to the root—*οὐδ' ἄρ' Ἀπόλλωνα χρυσάορα θήσατο μήτηρ.* The nouns formed in Greek from the root are numerous, as *θηλή*, *θῆλυς*, *τι-θήνη*, &c., and probably also the proper name Τη-*θύς*. In Latin it is not quite certain whether *filius* should be attributed to this root, or to BHU (Latin √*fu*) to "be," because the Latin confusedly represents both the dental and labial aspirate at the beginning of a word by *f*: the former view is taken by Curtius[3], the latter by Corssen[4]: and there is the same uncertainty about *femina.* In English "female" is a corruption of *femel,* from old French *femelle,* the diminutive of *femina.* But the root has certainly its Latin representative in *felo* = to suck. In Gothic we find *daddjan* "to give milk" in Mark xiii. 17: and *tâu* with the same sense in O. H. G. Curiously Sanskrit seems to be the only language which has applied this root to denote a cow—*dhenu*—obvious as the application might seem.

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[1] *Gr. Et.* No. 172.

The simple root DHA, to place, is found in Sk. *DHĀ*, and Greek *θε-ῖναι*, also in *con-do, ab-do,* &c. The secondary sense, of being engaged about a thing, is seen in the Teutonic family, A. S. *dôn*, our "do," and German *thun* (for O. H. G. *tu-an*). Yet the primary sense may still be seen in old English, e.g. in the phrase to "do-on" clothes, or to "don" them; and the opposite, to "doff" them[5].

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[1] E.g. *Od.* IV. 89.

[2] *To Apollo*, 123.

[3] *Gr. Et.* No. 307.

[4] *Kritische Beiträge*, 188.

[5] There is a curious parallelism here with the Latin: not only is

A rather obscure Greek root *θα* and its secondary √*θαϝ*, meaning to stare, or wonder at, is liable to be confused with the last in consequence of the loss of the final *v*. It does not seem to occur in any other language except in the Sclavonic branch[1], nor is the verb found in Ionic Greek, except perhaps in *Od.* XVIII. 191—*ἄμβροτα δῶρα δίδου ἵνα μιν θησαίατ' Ἀχαιοί*—where Bekker's emendation *θεσσαίατο* (quoted by Curtius, *l.c.*) seems probable. But in Doric Greek the verb occurs frequently: *θᾶσθε τὰς ἀπιστίας* says the Megarian (Ar. *Ach.* 770), and in Theokritus the word is used for going to some sight or show[2], and *θᾶσαι* means simply "look[3]!" by the process of weakening mentioned above, by which a general idea is substituted for one more vivid and more restricted—a process found, I think, more among the less quick-witted Dorians than among the other Greeks: thus in Theokritus *ἕρπειν* (Indo-Eur. SARP, to creep) means simply to go[4], but in Ionic and Attic too the primary sense is not infrequently lost. The nouns however derived from this root are not restricted to Doric, as *θαῦμα* (for *θαϝ-μα*), *θέα* (for *θεϝ-α*): *θαῦμα* indeed is sometimes derived from the following root DHU: the derivations are equally possible phonetically: but "staring" seems to denote wonder more naturally than "rapid motion" does. Fick[5] would refer *θέα* to a root DHI, to think; we have √*dhyai* in this sense in Sanskrit[6], and *dhî*, a noun expressing mind. I think this much less probable. *θάμβος* and *τέθηπα* have been already referred to this family[7].

The derivatives of the root DHU to "shake" or "move quickly" retain the original meaning with curiously different results. In Sanskrit from the lengthened form √*dhû* we have *dhûma* = smoke, and *dhûli* "dust." In Greek

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ab-do, "I do af" or "off," but *ab-did-i* is "I off-did." Our "did" is a genuine example of a reduplicated perfect: it was *dide* (dissyllabic) in A. S. See Max Müller, *Lectures*, I. p. 233 (2nd ed.).

[1] *Gr. Et.* No. 308.

[2] II. 72, XV. 23.

[3] I. 149.

[4] VII. 2, XV. 26, &c.

[5] p. 102.

[6] See, however, p. 105.

[7] *See* p. 101.

√θυ gives us *θύειν*, in Homer of rushing winds and streams—the *ἄνεμος σὺν λαίλαπι θύων*, or Skamandros *οἴδματι θύων*; but the same verb was at the same time used for burning—apparently the connecting link is the flaming, or the quivering of the air about fire—and in post-Homeric times *θύειν* is regularly used of "sacrificing." But the noun *θυμός* seems from the earliest traceable times to have been confined to the movement of the soul: whilst *θύελλα* remained fixed to the earliest sense[1], and *θύος* was attached to the derived idea of sacrifice. In Latin *fumus*, O. H. G. *toum*, Sclav. *dymŭ* and our "dust" (originally *dunst*), is still retained for the primary sensuous idea of agitation. But the Sclavonic has followed in the wake of the Greek by expressing the soul by *duša;* and the Lithuanian *dûma* denotes both thought and soul[2].

Perhaps no Indo-European noun has preserved its form so perfectly during all its wanderings as *madhu.* It is the Sanskrit *madhu*, first meaning honey, then "a spirituous liquor extracted from the blossoms of the Bassia latifolia," according to Prof. Benfey's Sanskrit dictionary: in Greek it is *μέθυ*, with no meaning but wine. The O. H. G. is *metu*, and the Anglo-Saxon *medo*—our "mead." The Sclav. *medu* and Lith *midus* seem not to have passed beyond the signification of honey[3]. The Gaelic *mil* also is honey only, and *mil-dheoch* (honey-drink) is required to denote mead: compare also Welsh *meddyglyn*, better known as metheglin. Prof. Curtius takes the primary meaning to have been—a sweet drink. It seems to me more likely that the primary meaning was honey, and that the North-Western peoples parted from the common stock before the word had got any other meaning; the invention of mead being thus left to our Teutonic forefathers' unaided ingenuity. The word reached its next stage of a sweet, and then intoxicating drink, before the separation of the Aryan and South European peoples: and never passed beyond this stage in India, a country where the palm supplies most of the spirituous liquor consumed and where grapes are grown only as a garden fruit[1]. But in Greece, a vine-growing country, the signification "wine" once attained, had driven out all others before the days of Homer.

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[1] Mr Paley (note to *Il.* XII. 253) connects *θύελλα* and *θύειν* in the sense of motion with *θεῖν* to run and *θοός*, and derives them all from *θεϜ*. But surely this is impossible. From *θεϜ* we can get only *θεϜω* or *θέω*, not *θύω*. What analogy is there for such a formation? It is of course possible that there may have been two distinct roots, one "to rush," and one "to burn." But the ultimate Greek form of each must have been *√θυ*.

[2] *Gr. Et.* No. 320. M. Müller, II. 210.

[3] *Gr. Et.* No. 322.

BH.

(Indo-Eur. *BH* = Sk. *bh* = Gk. *φ* = Lat. *f* (initial), *b* (medial) = Goth. *b* = O. H. G. *b*, *p* = Lith. *b*.)

Considering the fact above mentioned that B is found in no certain Indo-European root, it is certainly not a little surprising that BH is found in some of the most common, such as BHA "to give light" (the lengthened forms of which have been already mentioned), BHU "to be," and BHAR "to bear." The derivatives of BHU are too well known and have varied too little from the radical idea to need much description. I may mention however the participle *bhavant*, which is found in a restricted sense—a human "being"—in Sanskrit and Greek: compare also our own use of the participle. In Sanskrit it is used as a respectful periphrasis for a person spoken to. Thus, instead of saying "Do this," the polite phrase is "Let the being (= his excellency) do this." There is nothing however of this sense in the Greek *φώ(τ)ς* i.e. *φαϝ-ατ-ς*. The derivatives of BHAR are very different in the different languages. Thus while in Sanskrit the primary idea of "bearing" has passed in the main part of the derivatives into that of supporting and of nourishing; and while in Gothic *bairan* has the secondary sense of "bearing children"—compare the Scotch "bairn;"—in Greek there is no important variant from the simplest sense of carrying except *φόρος* meaning tribute. In Latin, on the contrary, the root has been very prolific: beside *fer-ax* and *fer-tilis* we have probably *far*, corn, and *fors*, *for-tuna*, &c. that which brings our luck to us[1].

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[1] Elphinstone's *India*, Vol. I. pp. 10, 14.

An interesting root is ARBH "to be active:" it appears in Sanskrit as *√rabh*, which has commonly the sense of desiring; but its most frequent compound *sam-ā-rabh* signifies to undertake. It appears as *√αλφ*, i. e. to bring in, or yield, in the Homeric *ὦνον ἀλφεῖν* and in the much discussed *ἄνδρες ἀλφησταί*, probably "active, enterprising men." In Latin we have *labor* and all its derivatives: in Gothic *arbaiths* in the same sense, the modern German *arbeit:* and the Sclavonian *rabu* is a "servant[2]." *Earfoð*, a difficulty, is Anglo-Saxon: and the Old English *arrfeþþ*, difficult, occurs in the Ormulum.

While we find little agreement among the different peoples in the terms by which they denote the sun, moon, and heaven—a fact which perhaps may point out to us that the Indo-Europeans lived in a country where man was to a great extent independent of the atmospheric conditions, and not subdued by them,—yet they all agree in their name for the cloud. The Sanskrit *nabhas* is the Greek *νέφος*: the Latin *nubes*, and *nebula*, and the German *nebel*, are cognate formations: and the Sclavonic *nebo* is the sky[3]. This agreement is curious, and rather difficult to explain.

The Indo-European *bhratar*, brother, is found with slight difference in all the peoples; the Greek *φρατήρ* alone has slightly changed, or widened, its sense: whereby the use of *ἀδελφός* was rendered necessary for the simpler relationship. Here we see that the suffix *-tar*—found in the Greek *-τερ* or *-τορ* and the Latin *-tor*—was used before the separation to denote relationship. It is not very easy to see the connection between this use of it and the other more common one to mark the agent[1]. Whether there were originally two distinct forms which by phonetic influence were confused together; or whether *-tar* first denoted the agent, and the different domestic relations were first conceived of as the performance of certain functions (so that *bhratar* meant originally the bearer or supporter, *patar* the protector, *matar* the producer)—is impossible for us to decide. One objection to the latter view lies in the somewhat artificial character of the derivations here given; the conceptions seem on the whole so little obvious or simple. No doubt there may have been originally a score of other words besides *patar* by which a father could be known, and *patar* may have driven them all out of the field by virtue of no superior merit as a conception, but from greater convenience of sound, or even some other more trifling reasons: such an elimination only requires time: and long time must have elapsed between the simple beginnings of primitive man upon the earth and the stage of development which the Indo-Europeans had attained when they first appear in that dim Eastern dawn of what is to us the world's history: and therefore the charge of artificiality against these derivations should go for no more than it is worth. Yet I confess I cannot help suspecting that these words, *patar* and *matar*, denoting as they do one of the simplest and earliest relationships, may possibly have been a legacy received from a still more distant time, remnants of an utterly perished language, brought down in some simpler form, and afterwards fashioned by our forefathers, so as to lose what was strange in their appearance, and be capable of being referred to a known Indo-European root and suffix. Certainly the first syllable of each word seems marvellously like the language of nature.

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[1] *Gr. Et.* No. 411.

[2] *Ib.* No. 398.

[3] *Ib.* No. 402.

(Possibility of some of our words being older than the Indo-European roots).

II. Protracted sounds.

I have thus given examples of the nine momentary sounds as they occur in roots and words presumably Indo-

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[1] See above, p. 51.

European. The protracted sounds, which we now proceed to consider, require less strength and distinctness in articulation. Hence they occur less frequently in roots than the strong explosive sounds, which were better fitted to express with firmness and precision the ideas produced by natural objects through the senses upon the mind of a quick and vigorous race. I shall begin with the nasals, because they have a close and obvious connection with the momentary sounds: we have seen that the position of the mouth-organs for each is the same as that for the corresponding explosive sound: but that, in addition, the nasal apertures of the pharynx are open. Consequently each language should possess as many nasal sounds as it has distinct classes of consonants produced at the different points of contact: thus in Sanskrit, which possesses two additional classes of consonants, the palatal and lingual, sounded between the guttural and the dental, each of these classes has its own nasal, distinguished like the other nasals by its own peculiar symbol. Sanskrit has thus five nasal letters, while no European language has more than two symbols, though many have at least a third sound, like that of *ng* at the end of English "sing," to express a guttural nasal. The question has already been mentioned whether this sound is Indo-European. Certainly that language possessed no special symbol for it: and there is no evidence that it could ever stand alone in any ancient language but Sanskrit: in all the others it is only found in contact with the guttural which produced it, as in *ἀγχόνη, angustus.* These two words, together with the Gothic *aggvus*[1] also meaning "narrow" and derived from the same root as the others, might seem to justify us in assuming an Indo-European root *aṅg* (where by *ṅ* I denote the sound *ng*). But no stronger form is found in Sanskrit than *agha,* in the sense of "evil:" and the Greek also has the simpler √*αχ,* as in *ἄχος*: a later origin must therefore

1. *Nasals.*

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[1] The symbol *g,* to denote the nasal, was of course borrowed from the Greek usage.

be attributed to the nasal, in this and in similar cases. The most that we can infer is that the sound was becoming recognised before the separation of languages, but not yet so fully as to require a definite symbol.

The dental and labial nasals are found unaltered in all the languages. The only variety we find is in the Greek, Gothic, and Lithuanian, which take *n* at the end of a word where the other languages have *m*. The reason is obvious: *m*, which is pronounced with the lips firmly closed, is less fitted for the end of a word, where the tendency is always to let the lips part.

N.

From AN, to blow, we have *an-ila* in Sanskrit and *ἄν-εμος* in Greek meaning wind. Transferred to the spiritual world the Graeco-Italian *anemos* becomes *animus*, the spirit, in Latin. In Scotch "aynd" is breath (found in Barbour), and there is an old English word "onde[1]." The O. H. G. *unst*[2] is the violent wind, while *ansts* in Gothic denotes favour or grace: so curious is the interlacing of the physical and metaphysical in the derivatives of this root. In Sanskrit *ânana* is the mouth, and then like *os* comes to mean a face: and most probably the same meaning is found in *προσ-ηνής*, with face turned towards one, *ἀπηνής*, with averted face, *πρηνής*, with face bent forward, *ὑπήνη*, the part below the mouth. These etymologies are due to Prof. Benfey, who also connects *prâna*, which in Sanskrit signifies both breath and life, with the Greek *φρήν* and *φρόντις*.

The severity of the winter in the original home of the Indo-European nations is shewn by their all having the same word for snow: except indeed the Hindu. The original root was SNIGH, which is retained in Sanskrit in the form *snih*, but it denotes viscosity, and the derivative *sneha* means first oil, then love. The Zend however has the root in its old sense: in Greek the guttural has passed into a labial, and we have *νίφας*, &c.: in Latin *ning-ere*, the first consonant being lost, as often, in Latin: the Gothic for "snow" is *snaivs*, the Lithuanian *snĕgas*. The fact that the Indians alone allowed the word to pass out of its original sense shews that they passed into a climate the most unlike to that of the common fatherland. Their common word for snow is *hima*, whence *Himâlaya*, the place where the snow lies: it comes from the root GHI, which has given the other languages their word for winter, *χειμών*, *hiemps*, Lithuanian *žëma:* the fact that *hima* was used by the Hindus to denote a number of other objects remarkable for whiteness and freshness—such as camphor, the pearl, the white lotus, and fresh butter[1]—may shew that snow was to them an object to be admired from a distance rather than an inconvenience under foot. Some general inferences about the climate of our fatherland will be found in a note at the end of this chapter.

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[1] As in Gower's *Confessio Amantis*; "she gaspeth with a drechinge *onde*," i.e. a labouring breath; given in Morris, *Specimens* &c. p. 275, ed. 2.

[2] *Gr. Et.* No. 419.

The agreement in the word for a daughter-in-law is curious. The Sk. *snushā*, Gr. *νυός*, Lat. *nurus*, and O. H. G. *snur*, and A. S. *snor*[2], point to the Indo-European form *snusa:* which may not unlikely have originally been *sunusa*, a derivative from *sunu*, "a son" (which is a Sanskrit form from SU, "to beget;" whence *υἱός* = *su-yo-s*). A man was *nar* or *nara.* We have it in Sanskrit *nṛi*, in *ἀ-νερ*, and it is found in all the Italian dialects as *ner*, except in Latin, where it seems to have been superseded by *uir*. It is the Sabine name *Nero;* and *Nerius* is a secondary form. The Welsh *nerth*, Irish *nert*, mean manliness[3]. These words belong to the class which can be best relied upon to shew the affinity of the Keltic to the other European languages: the identity of the root is certain and the formation seems independent: therefore they were not merely borrowed words.

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[1] Benf. *Lex. s.v.*

[2] As in Matt. x. 35; and see *Gr. Et.* No. 444.

[3] See Ebel, p. 108; Fick, 110.

M.

The labial-nasal is found in the root MAR, which with its strengthened forms MARD, and MARP—if this latter be really connected with it—is well known from the full and interesting discussion it has received from Max Müller in his second series of lectures. It appears most commonly in Greek and Latin as *√mor* (or *√μρο* in Greek as *α-μ(β)ρο-τος*), and mostly restricted to the sense of death. Our "murder" is to be seen in the Gothic *maurthr*.

One of the most important roots in the language is MAN, to think. This root indeed, as we have already seen, is only a secondary, modified form of MA, to measure (whence comes *ma-ta* which the Sanskrit grammars give as the past participle of *man*, and *ma-ti*, thought): but it is undoubtedly older than the time of the separation. In the Sanskrit and in all the North-European languages, the derivatives of this verb signify nothing but operations of the mind, as thought and memory: in old German *minna* is love, whence the minne-singers. In Anglo-Saxon *myn* is love, and *myne* "mind," memory. But in Latin the root is applied in its simplest form—*man-ere*—and in Greek almost its simplest—*μέν-ειν*—to express what is apparently a much more concrete idea—to remain. Which is the primary sense? It has already been incidentally mentioned that the concrete signification of a verb or noun, as a rule, always precedes the abstract: for example, VAR meant to look "warily" before *ὤρα* (strengthened derivative from Ϝορ, whence *ὁρ-άω*) meant caution, anxiety; or *ver-eor* meant to be afraid. Has then this root reversed the ordinary process? The fact, that no trace is left in the Teutonic and Sclavonic speeches of any original sense "to remain," is strongly against that having been the primary sense of the root. Probably no root has ever passed from a particular to a general signification without leaving some trace behind in some of its derivatives of its original meaning. How then can we explain this exception to the rule? According to Prof. Curtius[1] the root, starting with the idea of thought, took three main directions: (1) active, yearning thought, as seen in the Homeric *μέ-μον-α,* and also in *μένος*, which at first was active purpose of the soul—the *μένος καὶ θυμός* of the Homeric heroes—and then by association passed into the idea of bodily strength : and the cognate *μαίομαι* (= *μα-yο-μαι*) has the same meaning: (2) excited thought; whence *μαίνομαι, μῆνις* and *μάντις*, all denoting the carrying a man out of himself by power of thought; and here, on this theory, come *μένω* and *man-eo,* when a man is so filled with thought that he stands stock-still: (3) backward thought, remembering and admonishing, whence the proper name Μεν-τωρ, the adviser, Μοῦσα (i.e. Μον-*σα,* the teacher); and the numerous list of Latin derivatives, *men-tio, mon-eo, mons-trum* (for *mon-es-trum,* i.e. the warning), *reminiscor,* and many others. In *mentiri* and *mendax*[2] the idea has received a twist. This explanation seems to me the best that can be given of the inversion of the general rule. Prof. Curtius explains in the same way the parallel case of the Latin *mora,* delay, which stands alone as a concrete noun among the numerous abstract derivatives from SMAR, "to remember," the Greek √*μερ* in *μέρ-ιμνα,* &c., Lat. √*mor* in *memoria.*

From the simple root MA, we have many secondaries beside those already mentioned. Thus we have MAD, still used in the primary sense in *μέδ-ιμνος* and *mod-us,* but in a secondary derived sense of regulating in *μέδειν* and *moderor.* MADH denoted to measure something mentally, to consider, in *μαθεῖν* and *meditor,* probably also *medicus* and *medeor,* with the further sense of special artistic skill, acquired by such consideration. It will be seen that the derivatives of these two secondaries are in form indistinguishable in Latin: so that we can only judge by the required meaning to which root they should be assigned. Lastly, we have MAR, to measure out, apportion, in *μέρος* and *mereo;* perhaps *mer-c-s* is a further secondary, or rather tertiary.

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[1] *Gr. Et.* No. 429; see also p. 99.

[2] On the form of this word, see Corssen, *Kritische* Beiträge, 118.

The nasals have played a very prominent part in the formation of suffixes. A list has been given above[1] of twenty-two simple suffixes, the majority of which can be traced by comparison through the different languages up to Indo-European days. Of these, three consist of the simple vowels *a, i, u,* with no consonant at all. Out of the remaining nineteen, a nasal is found in eight; and, curiously enough, the dental *t* is found in no less than seven. In four the spirants are found, *r* in three, *k* and *dh* each in one: no other consonant occurs. This would seem to shew a facility of the *t* sound which we should not have looked for: since undoubtedly these suffixes must have been selected out of many other competitors to fill their post because of some proved lightness and convenience of sound, found in them more than in any other part of the mechanism of language. It is probable that we must look for the cause of this in the wide range through which this letter can be formed, i.e. by pressure of the tongue at any point from the mid-palate to the edge of the teeth. That the sound varied to some extent in Greek and Latin pronunciation may be inferred from the fact that in each language the dentals have been much more corrupted than either of the other classes, neither of which admit of much looseness and uncertainty as to the point of contact. The preponderance of nasals in these suffixes is not surprising: they can be pronounced clearly with less effort than any other sound except *r* and *l.* Hence we have in frequent cases the suffixes *-ma, -man, -mant, vant, an, ana, na, ni, nu.*

2. *Fricatives or Spirants.*

We now come to the continuous fricative sounds, as opposed to the shut sounds (momentary and continuous) which we have been hitherto considering. Out of the much larger list of sounds the nature of which we examined[1], we have but four or five to consider now; four central, Y, S, V, R: and one lateral, L. As we have seen, *r* really belongs to the same class as *y* and *v*: but from its close connection with *l*, the two are often classed together as liquids, while the other three have received the convenient and not incorrect title of "spirants," which will be frequently applied to them in this book; but in reality *r* and even *l* have as good a title to the name. Of the first three, *y* and *v* are soft or sonant letters, the first palatal, the second labial or labio-dental: *s* is a hard letter. They have been retained uncorrupted in Sanskrit, and nearly so in the North-European languages: it is in the Zend, which however does not concern us, and in Greek and Latin (especially the former) that they have suffered most. Since therefore a full list of these variations must be given in their proper place, I shall give but few examples here of these sounds in primitive roots and words: just enough to shew that there really were such sounds as *y* and *v*, which would be a matter of great doubt to any mere Greek scholar from the absolute loss of the first letter, and slight traces left of the latter in the earliest stage of Greek.

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[1] See p. 48; see also Schleicher, *Comp.* p. 374, &c.

Y.

(Indo-Eur. *Y* = Sk. *y* = Gr. *ι*, *ε*, *ζ*, (ʽ) = Lat. *i* = *j* in all the other members of the family, except the English, the sound however being the same.)

The root YUG has given the common term for the "yoke" to all languages. It is the Sanskrit *yuga-m*—which however denotes more frequently a pair, or couple; the Greek *ζυγόν*, Lat. *iug-um*, Gothic *juk*, O. H. G. *joch*, Lithuanian *junga-s*. There can be no doubt of the employment of the Indo-Europeans as an agricultural people before the separation. The same root gave the Latins their term for a wife—*con-iux*—compare the Greek ὁμόζυξ, the acre, *iugerum*, and superlative *iuxta*, i.e. *iug-i-sta*, as Corssen ingeniously explains it[1], comparing *exta* = *ec-i-sta*, a superlative form beside *exterus*, *extra*.

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[1] See pp. 63—74.

A husband's brother's wife was called *yantar*. This was the Sanskrit *yâtṛi* (the *â* being lengthened by compensation), and the Sclav. *jętry*, where the lost nasal is indicated by the mark under the *e*. This gives the connecting link with εἰνάτερες and *ianitrices*[2]. The original meaning seems quite unattainable. Benfey connects the Latin and Greek words with Sanskrit *yâmâtri*[3], a daughter's husband: which is less satisfactory in meaning, and involves a change of nasals.

Time was certainly denoted by *yâra*: it is not quite certain whether it was a "year:" that is the sense of Zend *yâre*, Gothic *jer(a)*, Norw. *jaar*, and German *jahr*. In Sclavonic however *jara* is spring: and the Greek ὥρα is inconclusive. Probably the word meant first of all a season, to be fixed at any length as suited the different peoples. In Sanskrit we have nothing nearer than *yâ-tu*, formed by a different suffix, apparently from the secondary √*yâ*, to go: so that the word would naturally mean "the past[4]," or, if a year was the primary sense, a "going" or revolution of the sun.

A term for soup, *yusa*, is given by Sk. *yusha*, and by *ius*: ζωμός shews a different suffix: but in Sclavonic we have *jucha*, and *ch* in that language sometimes represents *s*. The root is doubtless YU, to mix. It will be seen that ζ frequently represents *y* in Greek. The letter indeed is most manifold in its shapes: beside the vowel-substitutes given in the heading, it also passes by assimilation into λ, μ, ν, ρ, σ, and τ, and is not seldom lost altogether. All these changes will be given in their places.

The pronominal stem "who" was formed in Indo-

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[1] *Ausspr.* II. 549.

[2] Fick, 158; *Gr. Et.* No. 423, b.

[3] *Lex. s.v.*

[4] *Gr. Et.* No. 522; Fick, 160.

European by this letter, as *ya-s*. Perhaps, as Curtius suggests[1], this stem itself was a secondary form derived from the simple pronominal stem *i* = that, Latin *i-s*, by the affix *a*, the radical vowel passing before it into the semi-vowel —this conjecture derives support from the Gothic method of forming the relative by adding *ei* to the demonstrative pronoun: thus *thata* + *ei* or *thatei* = which. The Sanskrit has kept this pronoun unchanged: the Greeks suffered the spirant to sink into the spiritus asper—ὁ-ς, with its cases *οὗ, ὅθεν, ὅθι*, &c. The Gothic, though forming its relative by a different rule, seems yet to have kept a trace of the old form in *jah*, which represents *καί, γάρ* and *δέ* in the Gospels: it was apparently a loose conjunctive pronoun like the Latin *que*. *Jabai*, which is commonly given as an example, may be *jah-ibai*[2]: the Sclavonic has the form pretty accurately—*ji-s*—but transferred it to the demonstrative. This variety of usage may shew that this secondary pronoun (if Prof. Curtius' hypothesis be true) existed indeed before the separation of the North-Western peoples, but had not yet clearly separated itself in meaning from the demonstrative: and that the superior logic of the remaining peoples first gave it its distinct restricted meaning. In Greek the consciousness of this *y* remained till the days of Homer—as we find in the *Iliad* lines ending with *θεός ὥς*, &c., where the apparent irregularity is often explained by a supposed digamma: in truth it probably was no irregularity at the time when the line was first recited, but the sound of the *y* was still slightly heard. This ὡς was the ablative case of ὁ-ς and equivalent to the Sanskrit *yât*, final τ in Greek always passing into σ: just as by the same loss of the *y*, *yâvat* = "how much," is found in Greek in the very dissimilar form ἁ-Ϝος, Doric ἇς, Attic ἕως[3].

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[1] *Gr. Et.* No. 606.

[2] See Skeat, *Gothic Glossary*, *s.v.*

[3] Delbruch (Curtius, *Studien*, II. 2. 193) argues with much acuteness that the *ā* was a Sanskrit variation and that the first vowel was originally short. He takes the analogy of *βασιλεϜ-ος*, &c., and considers that sometimes the ε was changed to η (*βασιλῆος*) by the common backward action

The most frequent traces of this spirant are to be found in formative and case-suffixes[1]. Thus the original comparative suffix *-yans*—probably once *-yant,* can be traced through the Sanskrit, e.g. *bhū-yam̃s* = more; the Greek *-ιον,* as *κακιον,* though often much hidden by assimilation, of which more hereafter; *-ior,* earlier *-ios,* as *maior,* for *mag-ior;* compare the Spanish *mayor:* and even the Gothic *is* = *jas* by a phonetic rule of the language (*i* = *ja*[2]). A middle step, *jis,* seems to occur in *hwarjis,* the interrogative pronoun.

S.

(Indo-Eur. *S* = Sk. *s, sh* = Gr. *σ,* (ʽ) = Lat. *s, r* = Goth. *s, z* = O. H. G. *s, r* = Lith. *s*.)

The sound of original S was probably hard, not the corresponding soft *z* which is often denoted by the same symbol. The letter is preserved in every language in some of the forms derived from AS to "be." In Sanskrit we have the primitive form: in Greek and Latin it appears as *ES,* (*e*)*s-um:* in Gothic the original vowel is seen as *i,* and this language also (like Latin and Greek) has corrupted the first person into *im,* but kept the *s* in the third person *ist,* our own "is." The Lithuanian, which has preserved the conjugational suffixes with remarkable accuracy, still exhibits *es-mi* and *es-ti.* The root no doubt meant originally to breathe, though perhaps no language but the Sanskrit has any derivative bearing that sense[3]. The root was used in Sanskrit and in Greek to express moral ideas: thus (*a*)*sat* the participle signifies "true" (really existing) and "good;" and to the same pro-

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of a vocalised spirant; but the Ionic, which still retained the consciousness of *y* and *v*, could let the change act forward and make *βασιλέως*, at pleasure, as well as the other; and the Attic Greek adopted it; so also the *ἕως* we are now considering.

This therefore furnishes an explanation of these vowel changes, different from "compensation;" see Chapter I. page 4.

[1] See pages 48, 49.

[2] Schleicher, *Comp.* 479—484.

[3] *See M. Müller*, Lect. II. 249.

cess is probably due the same sense of the Homeric ἐΰς (for ἐσ-υ-ς, the suffix being different), and the common εὖ, "well," to which the Sanskrit prefix *su-* is precisely parallel. The correspondence of form and sense between ἐτεός and *sat-ya-s* points strongly to their common derivation from this root[1].

The roots for sewing and spinning—SIV and NADH—(as Mommsen has pointed out[2]) are alike in all Indo-European languages; though at the same time he denies to our forefathers the further accomplishment of weaving. The former—SIV—is not indeed very recognisable in Greek. Both in Greek and Latin the *i* has been lost, because the *v* was resolved into the vowel *u* (Latin *su-o*, *sutor*, &c.), and therefore one of the two vowels was obliged to fall out; and the root is then probably to be found in *κασσύω = κατα-συ-ω*, which is restricted however to the cobbler's stitch. From NADH comes Gothic *nethla*, our "needle."

In the greater number of roots, however, the *s* must be inferred by the classical scholar chiefly from the kindred languages, as it commonly drops out altogether between two vowels in Greek, and in Latin under similar circumstances passes into *r*. Thus the root US "to burn" is authenticated by the Sanskrit and Zend *√ush*, and Latin *√us* in *us-tum*. But no nearer forms occur in Greek than the Homeric εὕω (for εὕσω), meaning to singe pigs, and *αὕω*, to dry, whence *αὖος* and *αὐχμός*. If, as Professor Curtius thinks[3], the root points back to an older form VAS, it may be better to connect with it, as he does, the name Hestia—Vesta—almost the only divinity not Indo-European[4], yet from the first common to both the Greek and Italian nations—rather than with VAS to "dwell," the root which gave the Greek ϝάστυ, and the Latin *verna*, the house-born slave. But, if so, VAS sank to US in Indo-European times, as is proved by the widely-spread derivatives of that form. The hot wind, Εὖρος, and *Auster*, are clearly from this root: the different forms which the vowel has taken will be discussed in the chapter on vowel-intensification. Curtius also connects ἠέλιος with the same root[1], making the original form of the word αὐ(σ)έλιος; then the *υ* either fell out altogether, as in the common Greek ἀέλιος, or hardened itself into *β* as in the Cretan ἀβέλιος. If this be so, as seems in the highest degree probable, there can be no hesitation in identifying with this Greek αὐσέλιος the Latin proper name Aurelius, the older form of which was Auselius; and very curious in this connection is the old legend respecting the Aurelian family, that they were descended from the sun[2]. The last Graeco-Italian word connected with this root is *Ausos*, the morning—which became on the one side the Aeolic αὔως, Doric ἀώς, Ionic ἠώς, and Attic ἕως—where the rough breathing seems to be due, as often, to Athenian Cockneydom;—on the other side, by the addition of a secondary suffix, the Latin *Ausos-a* or *Aurora*. The Sk. *ushas* and Zend *usha* both denote the morning; also the Lith. *auszra*, where the vowel has been raised as in the Graeco-Italian. The German Oest and our East are from the same root, and denote the morning-land[3].

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[1] *Gr. Et.* No. 564. Fick however (p. 186) connects these words with Sanskrit *vasu* meaning "goods," wealth, which may perhaps once have meant good, as an adjective. He explains ἠΰς by a prosthetic ε before the *v*, i.e. ε-ϝεσυ. But the η may be equally well due to the lost *s*. The Sanskrit analogies seem to me almost decisive for the explanation given in the text.

[2] *Hist. Rome*, I. 17.

[3] *Gr. Et.* No. 610.

[4] Mommsen, *Hist. Rome*, I. 21.

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[1] *Gr. Et.* No. 612.

[2] Paul. *Epit.* 23, quoted by Curtius.

[3] The word ἠώς is derived by Mr Paley (*Iliad*, XI. 1) from the "root αϝ, the same as in ἀήρ, ἀήτης, and connected with ϝαϝ (φάος)." In the preface to the first edition of this work I objected to this as an instance of unscientific etymology. The scientific method, as I understand it, consists in putting side by side words which have the same or a cognate meaning in languages known to be related to each other; then in examining whether these words, tried each by the recognised phonetic laws of its own language, lead up to the same root. If thus correspondence both of *sense* and *form* is then found in two languages, the words are *probably* identical; if in three or four languages, the probability is

V.

(Indo-Eur. *V*=Sk. *v*=Gr. *υ*, Ϝ, (ʽ)=Lat. *u*=*v* in all others.)

A root VAS, to dwell, has been already mentioned. Another root of the same form signifies to clothe. I say another, because although of course it is possible to conceive that each of these significations was developed from another, e.g. that to dwell and to clothe are both modifications of an earlier sense, i.e. to cover; yet it seems to me, as I have already often said, more probable that the roots were originally diverse, and came into their present common form in times which elude our analysis: at any rate they are distinct roots for us, and their derivatives must be kept distinct. This VAS "to clothe" produced numerous Sanskrit words for clothing: it gave the Gothic *vas-ti*, "a vest:" it has the Graeco-Italian form √*ves:* which produced *ues-tis* and Ϝεσθής; and is hardly distinguishable in *ἕν-νυμι*, for Ϝεσ-*νυ*-*μι*, where the *σ* has been assimilated, or in the Homeric *ἑανός* (Ϝεσ-*ανο*-), where it

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immensely increased; and we reach as high a degree of probability (or practical certainty) as is possible in any experimental science, according to the number of instances which can be adduced. This method has been followed in the derivation of *ἠώς* from US. It is highly probable, from the two forms *αὔως*, and *Aurora*, considered in the light of the phonetic laws of the two languages; and it becomes practically certain when *ushas* and *auszra* are added; when we have four words agreeing in meaning, slightly differing in form, and all regularly derivable from US, but not, so far as I know, from any other root. What evidence can be set against this in favour of a root *α*Ϝ? Mr Paley in a review of my first edition (*Camb. Univ. Gazette*, Dec. 8, 1869) gives an assumed opinion of Dr Donaldson that *α*Ϝ and Ϝ*α*Ϝ were identical, because the notions of air and light are closely allied. The merely subjective impressions of any one philologer, however ingenious, can hardly weigh much against linguistic facts. Then he calls the root "an instance of onomatopoeia, expressing something that brushes past with a changeful and fitful gleam," and compares "our *whiff*, *waft*, *weft*, *chaff*, *ἄωτος*, *flare*, *fluff*." If all these could be shewn to be derived from *α*Ϝ or Ϝ*α*Ϝ, (which I am very sure is impossible), I cannot see that a case would be made out for deriving *ἠώς* from *α*Ϝ, half so probable as that I have given for deriving it from US. If it be not from US, how is the agreement of those four words to be accounted for?

is totally lost. Curtius[1] connects with the same root the similar word *ἑᾱνός*, which, as Buttmann has shewn[2], is regularly used in Homer as the epithet of a garment, and with the penultima long. Buttmann does not suggest any derivation, but wishes (I think justly) to separate the word from *ἕννυμι* and *ἑανός*, on the ground of the insufficiency of meaning in such phrases as *πέπλος ἑανός*, where some more distinctive epithet is to be expected. May the word have meant "woven," and been derived from a simpler form of the root which produced the German *weben*, our "web"? That there must have once been a root without the final consonant (probably VI) seems proved by the Sanskrit √*ve*, to "weave," and by the Latin *uieo*, to bind, or hoop, together with its derivatives *uitis*, *uimen*, *uitta*, &c., and by the A. S. *wiðie*, a band, or willow twig, our "withy." The sense suggested would, I think, suit all the passages in Homer where the word occurs, except that in which it is the epithet of tin; *τεῦξε δὲ οἱ κνημῖδας ἑανοῦ κασσιτέροιο*[3]: but the word is there commonly translated "flexible," and this secondary sense might fairly be derived from the first.

The pastoral occupations of the Indo-Europeans are shewn, among many other indications, by the perfect identity in the different nations of the name for the sheep. The original *avi* is unchanged in Sanskrit, Lithuanian, and Gothic (for though the actual word does not occur in this last language, it is proved by the derivatives *avethi*, a flock, and *avistr*, a fold). It is the English "ewe." The Graeco-Italian *ovis* has been affected by the differentiation of original *a*, to be described hereafter. Pictet suggests[4] the connection of the name with the root AV: which primarily meant to give ear, attention—whence *audio*, and very probably the Doric word *ἀΐτας*, which gives name to the twelfth Idyll of Theokritus[5]—then, in Sanskrit at least, took a secondary sense of protecting: so that *avi* should mean the creature to be attended to, both from its weakness and its value. This of course amounts to no more than a plausible conjecture.

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[1] *Gr. Et.* No. 565.

[2] *Lexil.* 238.

[3] *Il.* XVIII. 613.

[4] *Origines Ind.-Eur.* I. 357.

[5] *Gr. Et.* 346.

The almost absolute loss of this spirant in Greek would make the identification of words of the same or similar meaning in Greek and Latin impossible but for the help of the cognate languages, especially the Sanskrit. Thus we should scarcely think of identifying *ἰός* with *uirus,* did not the Sanskrit *visha* supply the missing link in the chain which leads us back with certainty to the form *visa,* which was in use before the separation of the three peoples, though, as *uirus* shews, not in any sense necessarily worse than an ill-tasting fluid. The Greek *ἰός*, the arrow, would seem to be due to the simple root I, from comparison with the Sanskrit *i-shu,* which is formed with a different suffix.

VA, to blow, gives in Sk. *vâta,* and Greek *ἀ-Ϝή-της*, Lith. *vëtra,* a storm, wind or storm; it is however commonly nasalised in Europe, as in *ue-n-tus,* in Gothic *vi-n-das,* and our "wind." It is also found in *ἄ-Ϝη-μι* and *αὐτμήν*: perhaps also in *uarus,* though a secondary form is here more probable.

Fick[1] connects *ἄτη* with another √*Ϝᾱ* and the obscure Sanskrit √*van* to hurt. The two forms really imply a root VA. From this comes *ἀ-Ϝα-τᾱ,* which is attested by the Lesbian *αὐάτα*[2]. The simple sense is found in Greek in *οὐτάω,* the *a* has been changed to *o* (as in the participle *ἀπούρας*, beside *ἀπαυράω*: the compound verb is *ἀπο-Ϝερ*: and the root is seen in Latin *uer-rere*). The root is found also in Lith. *votis* and Gothic *vundas,* our "wound." It explains the *ἀάατον Στυγὸς ὕδωρ,* where the first *a* is privative, the second prosthetic, and the third radical.

Vira was a man in Indo-European. It is the Sanskrit *vîra* in the same eulogistic sense as *uir,* opposed to *homo,* the *terrae filius*[3], the Lith. *víra-s,* the Gothic *vair,* Old

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[1] p. 187. [2] Pind. *Pyth.* II. 52. [3] See p. 122.

Irish *fer* (by a regular change in Keltic of the soft to the hard labial). It was the A. S. *wer,* but is lost with us, except in "wer-wolf."

Vaika was the house, the fixed abode, where a man "entered in" habitually, for the root is VIK to enter, the Greek Ϝικ in ἱκ-ε-της. The Sk. *veça* seems to have meant no more than the Greek Ϝοῖκ-ος, which however has a later form, though the older sense. But *uic-us* has been enlarged to an assemblage of buildings, the Gothic *veihs,* and our "wick." I have already pointed out the absence of any word to denote a town (in anything like the sense of Graeco-Italian times) among the Indo-Europeans.

Lastly, *v* was useful in some formative and case-suffixes. Thus the form *akva,* "a horse," is visible in all the derived languages—hardly perhaps in ἵππος, which is yet identical with *akva,* the labial spirant having assimilated the guttural *k* into the labial *p,* which then in turn assimilated the *s.* Similarly the fuller forms *-van* and *-vant* existed in the Indo-European, parallel to *-man* and *-mant.* The second *-vant*—corrupted to εντ and οτ in the Greek—χαρι-Ϝεντ, and τετυπ-Ϝοτ: in Latin the change was even more complete, if Schleicher[1] is right in tracing the termination *-oso* in *fructuosus,* &c. from *-vant* or rather a secondary *vant-a,* which became by changes common enough in the Latin *-vonso, -onso, -oso.*

Finally, we have to consider the cognate sounds R and L, commonly called liquids. I have already mentioned that there is some doubt whether L be as old as the days of the one common speech. I hold it certain that R in the original speech was the continuous central, not the vibrated or trilled sound. It is only on the supposition that it had a definite position in the mouth that the change into L becomes intelligible. The physiological difference between the two sounds has already been explained: the tongue is in the same direction for each of them, but *r* is central and *l* is lateral. The greater ease of *l* is so much and no more. Historical facts seem to point in the same direction[1]. L is much less frequent in Sanskrit than R, the Hindus having retained the R in many cases where in the European languages it has passed into L: thus the root of brightness and whiteness RUK is still √*ruj* in Sanskrit, but √*luk* in Graeco-Italian—λευκός and *luceo.* Clearly this change would be much less likely if original R had been a trill, capable of being sounded at any part of the mouth: it is much more likely that the original sound was the firm *r*, which could pass into either *l* or the trilled *r*. In Sanskrit, as in English, it went even further than the trill; the mouth passage was so open that the sound was absolutely vocalic: in Sanskrit we get the so-called vowel *ṛi*, in English the glide *r*, the sounds were probably identical. The passage from the stronger *r* is in each case historically traceable. The letter L is absent in Zend altogether. Still I shall have some roots to mention below where L, with this exception, is found universally; and there is much reason for believing that the change had begun to operate even before the separation of the peoples, but not to any great extent, if we may judge from the proportion which L bears to R in Sanskrit, remembering that some at least of the L sounds must have arisen after the separation. I shall take R first, mentioning a few cases where it is found in all the different languages.

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[1] *Comp.* p. 403.

R.

The first and most obvious root with this letter is AR. This root[2] gives the Greek *ἀρόω*, Latin *arare*, Gothic *arjan*, the old English "to ear," and Lithuanian *arti*—all meaning to plough. But this sense though universal in Europe did not belong to the Asiatic languages. In spite of the identity of sound, the Sanskrit *ar-i-tra* does not correspond in meaning to *ἀρ-ο-τρο-*, but to *ἐρ-ετ-μο-*; at least *ἐρετμός* and Latin *re-mus* (for *res-mus*) mean the oar, while the Sanskrit noun denotes the rudder, which was no doubt originally only a large oar. It is of course conceivable that in Sanskrit also the root once meant to plough, and then, ceasing to be used in its literal sense, signified only to plough the sea. But here it seems more likely that the two ideas of ploughing and rowing are special applications of the more general idea of propelling. The Greeks and Latins were then enabled by their greater vowel range to distinguish these different ideas by different forms of the original root: the original form √*ar* was retained to express ploughing: but as original A could be split up into *a*, *e*, and *o*, √*er* was taken to denote rowing. The same kind of differentiation is seen in the Lithuanian, which has *irti* to row, besides *arti* to plough. The vowel appears after *r* in Latin *remus* and *ratis*. Such changes, as has been already mentioned, are very possible between vowels and the semivocalic liquids and nasals. They are especially plentiful in England. Thus Old English *brid* is a *bird*: *bird* is our bride. Anglo-Saxon has *bred* and *bord* for our board. Old English *brest* is burst, and *bren* is burn; *eorning* is convertible with *renning*, i.e. running[1]: our horse, A. S. *hors*, is Norse *hros* and German *ross*. In all such cases the change seems to be between a vibrated *r* and a glide. In *bird* we have a glide; in *brid* a greater vibration than that of the ordinary English *r*. I think we may infer that wherever the metathesis took place, the *r* was vibrated. The third form of the root is to be found in the Graeco-Italian √*or* "to be uplifted," in *ὄρωρα* and *orior*. The identity of this root with the older AR is shewn by its occurrence in Sanskrit—weakened, it is true, in form to the single Sanskrit vowel *ṛi:* but such tenses as are formed directly from the root come from *ar:* still this slight difference of form served to keep the roots distinct. This root had also the L-form in Latin—*ad-olesco, sub-ol-es,* &c.: perhaps also *abolere,* where the sense would be causal, to lift up and cast away.

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[1] See p. 79.

[2] *Gr. Et.* No. 490.

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[1] Thus we read:

"Biholdes toward hise feet · say fro hem *renne*;
eornen al of red blod."

Joseph of Arimathie, 274, 5. ed. Skeat.

There are two other roots—identical in their Graeco-Italian form √*ver*—"to speak," and "to look warily," which were once VAR, for that form is preserved in each case by the Gothic, though as the second there means hardly more than to tell to beware, or to forbid, it may perhaps not be absolutely distinct from the first; but the difference in meaning in Latin is strong against their identity. Neither of them occurs in Sanskrit; a fact which is not surprising when we consider that √*var*—the form under which each must have appeared—is already engaged to express the three ideas of covering, surrounding, and choosing: all of which may possibly have come from one sensuous idea, such as putting the hand on a thing; from which the first and third idea would naturally be derived, and the second may have been deduced from the first: but the ideas expressed by √*ver,* which must in any case have been distinct from those expressed by √*ver,* were unable to maintain themselves under the same form as their stronger rival: the ideas therefore were expressed by other sounds, and these forms failed out of the language. The second root, "to look cautiously," became in Greek Ϝ*ορ,* and therefore so far distinct from the first root: but both roots by the loss of the spirant became undistinguishable from the roots *er* and *or* already mentioned: and no further vowel-change being possible, confusion was inevitable. Thus while we have from √*ver* to speak, *verbum* in Latin, and *vaurd* in Gothic—our "word"—from the older form √*var* the Greek can shew us only *ἐρεῖν* and *ἐρέσθαι.* Similarly √*ver,* to look cautiously, the Latin *vereor,* from the older form of which we get our "ware" and "ward," in the newer

(*Necessity of distinguishing between different roots which have the same form.*)

Greek form appears only as *ὁρᾶν*, and in several nouns, as *ὥρα*, *οὖρος* a "watcher," and its compounds *ἐπίουρος*, *φρουρός* and *φρουρά*.

Indeed a curious fatality seems to have brought together for the Greeks as many different ideas as possible under the same sound, *or*. The name for a mountain—*ὄρος*—has no certain congeners in other languages: but the Sanskrit *giri*, and the Sclavonic *gora*[1], make it probable that the loss of initial *g*, which though rare yet does occur in Greek, has caused the confusion in form between this word and the derivatives of √*or* and √*vor*. Before the *g* entirely passed out of the Greek it probably was changed in one derivative at least by means of a parasitic *v* to *β*: thus *βορέας*, the north wind, would be the mountain-wind; and the Hyperboreans, instead of being dwellers beyond the north-wind, would occupy a more conceivable position, "beyond the mountains"—the natural dividers of mankind in early times. Again, *ὅρος* a boundary—the Ionic *οὖρος*—is almost identical in form with *ὄρος* a mountain—for the rough breathing is perhaps only an Attic mispronunciation; but the derivation of the word is very doubtful: if it be from √*ser* to draw—whence *εἴρω* and *σειρά*, a rope—in the sense of a line drawn—compare the Latin *ser-ies*, a row, and the Spanish "sierra," a long ridge—the breathing will then be the regular representative of the lost spirant. Lastly, *ὀρός*, whey, gives us a third identical form; where we know the missing letter to have been *s* from the Latin *serum:* and the similarity of sense and sound leads at once to the Sanskrit *sarā:* which is derived by the Indian grammarians from *sṛi* (SAR) to go; a somewhat inappropriate derivation, as Prof. Key has truly pointed out, for a word which denotes, besides whey, a pond and salt (*ἅλς*, *sal*, and *salum*); whilst *sarit*, said to come from the same root, means a river. Probably derivatives from different roots have been here confounded: and whilst *sarit* may be assigned to SAR, to go, *ὀρός* and the rest may be better referred to another lost SAR, identical in form, but differing in sense; but what that sense was, we cannot say.

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[1] *Gr. Et.* No. 504.

L.

I shall briefly give one or two examples of this letter in order to shew what claims it has to belong to the original alphabet.

LAS[1] is found in the Sanskrit √*las* to embrace and √*lash* to desire: in the Doric *λά-ω* to wish, where the *σ* has fallen out: in the common Greek *λῆμα* and *λι-λα-ί-ομαι*; probably also in *λίαν*; in *las-civus;* and in Gothic *lustus*, desire, "lust." In the Bohemian dialect of the Sclavonic *laska* is love. In all these the connection of form and idea is sufficiently plain.

Another root with a double form LIBH and LUBH, to desire, appears under the second form, with the derivative *lobha* covetousness. It is the rare Greek verb *λίπτομαι*, whence *λελιμμένος μάχης* used by Aeschylus[2]; the Latin has both forms *lubet* and *libet*, the former presumably the older, according to the scale of vowel-strength in that language: in Gothic *liubs* is "lief," i.e. dear, hence the Scotch *leesome* (i.e. *lief-some*), pleasant[3]: and the common "leeze me," i.e. lief is me, meaning, I am fond of a thing: the O. H. G. has *liuban* to love, and that which man loves, *lob*, praise: the Lithuanian and Sclavonic present the root under the same form and with the same meaning as the German. LU, to cut, is √*lû* in Sanskrit, where it has produced a large class of derivatives, but all close in meaning. In Greek and Latin we have *λυω* and *soluo,* i.e. *se-lu-o.* In Lithuanian, *liauti* is to end, with which Fick[4] compares

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[1] *Gr. Et.* No. 532.

[2] *Seven against Thebes*, 380.

[3] "The tender heart o' leesome luve
The gowd an' siller canna buy."
BURNS, p. 204, Globe ed.

[4] p. 176.

Λυσί-μαχος. He also refers *λάϊον* to this root, as that which is cut: so that the transition from the corn to the field[1] is easy enough: *λαῖον* also is a sickle. A secondary in *s* has given in the Teutonic languages the Gothic *lausjan*, Germ. *lösen*, our "loose." In Europe the primary root seems to have taken a derived sense, to cut off for oneself: hence perhaps *ληΐς*, *λεία*, and *ἀπολαύω*[2]; in Latin *lucrum*, and *Lauerna*: Gothic *laun*, A. S. *lôn*, Germ. *lohn*, and our "loan," with a different sense.

In these and some other cases *l* is found universally. It is of course possible that the weakening may have taken place in Sanskrit and in the other languages separately. The independent action of the European and Asiatic families in this matter is shewn by the fact that sometimes, though very rarely, Sanskrit has *l* while the other languages have *r*: thus Sanskrit *lup* = Latin *rup* (in *rumpo*), O. H. G. *raubon*, Gothic *raupjan*, the Scotch "roup," and our "rob." In most cases therefore *l* is probably later: but in one or two cases although a form in *r* exists, yet the distinction in meaning is sufficiently clear to make each appear Indo-European.

The onomatopoeia *lala* has distinct meanings in *λαλεῖν*, German *lallen*, and Lith. *lalóti*. This word at least is not changed from *rara*, but mere onomatopoeias cannot be relied upon as arguments for the existence of a letter at any particular date. See under B.

Concluding remarks.

I have thus given examples of the occurrence of all the certain consonants of the Indo-European alphabet, except perhaps B, in roots and words presumably Indo-European. These examples must have already made plain the existence of the three original vowels A, I, U. The vowels E and O have also occurred frequently in European derivatives: sometimes also in Sanskrit words, where however their position is quite different: they are there always long, and are the first intensified forms of the simple vowels I and U respectively, corresponding to *ai* and *au* in the original language. In the other languages ĕ and ŏ, are, as has been already mentioned, weakened forms of A. I shall not here describe these vowel-changes further, and their effect on the different languages, in the way in which I have to some extent described some of the more remarkable consonantal changes in the languages of India and North Europe, because the investigation, if fully carried out, would lead us too far away from our subject. The vowels are the soul of a language: in the laws of their change the principles of growth of the whole language are involved. This will be seen in the examination of the vowel-laws of the Greek and Latin.

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[1] Theok. x. 42.

[2] Fick, p. 394; but see *Gr. Et.* No. 536.

I have given these few instances to shew, as I said before, that there was a real Indo-European language, not a mere list of naked roots to which the name Indo-European has been given. They will suffice, together with the list of suffixes given in a previous chapter, to shew that this language had reached the second stage of linguistic progress—that stage in which different relations were no longer expressed, as in the Chinese, by adding to the root a new significant root. For this purpose suffixes were employed, syllables whose original meaning had passed away, which were therefore all the better qualified to meet the logical wants of a people which had attained to a very considerable degree of cultivation.

Any description of the physical and moral development of our ancestors is beyond my present scope; except so far as any light has been thrown by the above examples on the conditions of place and climate under which they lived, on their domestic life, on their social institutions, and on their conceptions of an unseen world. Full information on all these points is to be obtained from Pictet's elaborate work already referred to, the *Origines Indo-Européennes:* and the English reader may find a brief but excellent sketch in the second chapter of Mommsen's *History of Rome,* which is especially valuable to us, because it not only describes the condition of the collective family; but also estimates the stage of development at which the Graeco-Italian race had arrived at the time when it had parted off from the Northern and Eastern peoples, but had not been broken up into the Hellenes and Italians.

NOTE I. ON CHAPTER V.

The simplest form into which Grimm's Law can be put is the following Table, in which A stands for aspirate, S for soft, and H for hard. The word ASH may serve as a *memoria technica* for the whole.

TABLE I.

Ind.-Eur., Greek, Latin.	Low German (Gothic, English, &c.).	Old High German.
A	S	H
S	H	A
H	A	S

The substitutes are given more exactly in the following tables: it will be seen that breaths have taken the place of aspirates everywhere except in Greek.

TABLE II.

Gr.	Lat.	Goth.	O. H. G.	Gr.	Lat.	Goth.	O. H. G.	Gr.	Lat.	Goth.	O. H. G.
χ	h, g	g	k	g		k	ch, h	κ	c, q	h, g	h, g
θ	f, d	d	t	d		t	z, sz	t		th, d	d
φ	f, b	b	p	b		p	f, pf	p		f, b	f, v, b

I now give words containing the *regular* substitutes in each case, where such can be given. I have taken English to represent the Low German: I give the modern High German equivalents. It will be seen how much that language has varied from its ancient form. Initial sounds are taken (with one exception), because they are more regular.

TABLE III.

χην	hanser	goose	kans (gans)	*γένος*	genus	kin	chunni (cf. kind)	*καρδία*	cord	heart	[2]herza (herz)
θήρ	fera	deer	tior (thier)	*δύο*	duo	two	zuei (zwei)	*τρίς*	tris	three	drî (drei)
φηγός	fagus	beech	puocha (büche)	[1]*κάνναβις*		hemp	hanf	*πούς*	pes	foot	[2]fuoz (fuss)

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[1] Ind.-Eur. *b* is not found at the beginning of words. See p. 115.

[2] No regular substitutes found in these cases.

Exceptions to the law are given very well by Ferrar[1]. They are found in a few distinctly onomatopoetic words; also in words borrowed by one language from another, when the sound of the original language was naturally retained. The exception becomes regular in the initial consonantal groups, *sk*, *st*, *sp:* thus *stella*, *star*, and *stern* (see p. 32), shew the *st* alike: the reason is plain enough; the hard *s* can be pronounced easily with no sound but a hard one. In the same way Helfenstein[2] explains the occurrence of *t* in *noct- night*, *naht* (*Nacht*), as due to the preservative influence of the preceding *h*. I much doubt this. I believe the preservation of this *t* in all the languages is best explained by the dislike to change again a word which had been changed once, lest all its distinctive features should be lost[3]: here, I think, *t* was retained because *k* had been already changed. In the same way I explain the correspondence in Gothic of *biuga* to φεύγω, *fugio:* the change of the aspirate to the soft at the beginning is regular, but the original *g* is not changed at the end of the root, and I think for the reason which I have given: there are a great many similar instances given by Ferrar[4], but explained by him as arising from a double aspirate in the root: i. e. he postulates here Ind.-Eur. BHUGH, and apparently thinks the GH was weakened to *g* in Graeco-Italian: this would be highly irregular; and there seems to me no sufficient evidence for his original form; and therefore I much prefer my explanation. But no doubt some apparent exceptions to the law have arisen from weakenings in the different languages after their separation: thus Gothic *faihan*, Germ. *fügen*, correspond to πήγνυμι: now we ought to find κ in Greek corresponding to *h* and *g* in the other languages: and √*pak* was the original form in Graeco-Italian, as is shewn by πάσσαλος and *paciscor:* but it was weakened to √παγ in Greece. Here it will be observed the Teutonic words have suffered a change of both consonants: the striving for clearness, spoken of above, operates frequently, but by no means regularly.

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[1] *Comparative Grammar*, I. 34—38.

[2] *Comparative Grammar of the Teutonic Languages*, p. 103.

[3] See Chapter I. p. 4.

[4] p. 36.

The reason of these changes has been suggested at page 5: see also Max Müller[1], with whom I agree as to their character. He seems however to regard the changes of the Gothic and High German to have been simultaneous: at least he says (p. 206) "none was before the other." It seems to me at least as probable that the changes of the Gothic came first in time, and were shared by the whole German race, Low and High alike, before their separation: then after that time the Low German altered no more, but the High German repeated the same change. This appears to me likely from the much slighter character of that change. It will be seen, that in the third division of Table III.—the division which deals with the original hards—in two cases out of three the change was never made at all in High German: and in the first division also in two cases the change, though made, was not permanent: the hards sank back into the softs again. The whole variation accordingly seems to me more like a faint reflex of the first[2]. The main objection to this view is the want of any sufficient motive, as far as we can see, for the second variation. The first variation rose, as all agree, from the objectionable aspirates. These were expressed by the soft in Gothic, and the other changes followed from a desire for clearness. But when they were gone, and the breaths *h*, *th*, *f* only were left, why should the High Germans have made any further change? I confess, I can give no reply.

In order to explain the change from the softs to the hards, Prof. March (*ib.*) suggests that the Kelts, who "used more surd breath and less sonant than we, adopted the speech of invading Teutons, that their Celtic pronunciation as heard by the Teutons become current; and that climatic influences and alliteration made the change thorough." The Keltic tendency to aspirate is doubtless an established physical fact, and has been mentioned above (p. 16): and the variation of English speech, within historical times in Ireland, lends some support to this plausible conjecture; perhaps all the support it is likely to receive.

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[1] *Lectures*, II. 206.

[2] See Prof. March, *Comparative Grammar of Anglo-Saxon*, p. 29.

NOTE II. ON CHAPTER V.

I mentioned above that nearly all the nations agree in their term for snow. The examples of agreement in the words denoting cold might be considerably increased. The severity of the Indo-European winter, which is inferred from them, suits well with the country which has been assigned by conjecture to our forefathers; "central Bactria, the mountainous part extending from the Hindoo Koosh to the plain of the Oxus[1]." This conjecture is confirmed by the fact that next to winter the most numerous analogies are to be found in the words for spring. One of the numerous Sanskrit names for spring is *vasanta;* the first part of this word is found in the Greek *ἔαρ* (for *Ϝεσ-αρ*), in the Latin *vēr* (for *veser*), the Lithuanian *was-ara* (but meaning "summer"), the Sclavonian *ves-na,* and the Scandinavian *vār.* This agreement is too great to be accidental; there can be no doubt that *vasa* or *vasara* was the name which the Indo-Europeans gave to the welcome spring which followed the five months winter of their high mountain home. Its meaning is very doubtful. There are two or three distinct roots of the same form, VAS, which have been already mentioned; but none gives a satisfactory meaning: the best perhaps is that which means "to clothe;" so that spring should be the re-clothing of Nature: this however may be thought fanciful. But in the names for summer we find hardly any agreement. Each nation had its own name. The Sanskrit *ushma* and Latin *aestas* are both the "burning time," but from different roots: the Greek *θέρος* is from a different root again, and implies only warmth. The Irish *sam* or *samh* may be akin to the German *Sommer,* of uncertain derivation; and these therefore have the best claim to having preserved the original term. This want of agreement is probably rightly explained by Pictet: in temperate climates summer is only a continuation of spring, and is less striking to the senses; hence the different peoples replaced the one primitive name—if indeed there were not already more than one in those early days—by distinct appellations of their own, suitable to the climate of their new abodes. Autumn offers us absolutely no analogies; it is not until the latest subdivision of the peoples that we find names for it occurring among these nations who required the term. For some never needed it, as the northern peoples: for them the old division sufficed, which separated distinctly only winter and spring, with summer considered as a continuation of the latter; the German peoples lost the old name for spring, and the Lithuanians, as we have seen, applied it to summer; both therefore parted with the old slight distinction. The Hindus strengthened it, and at an early period subdivided the three seasons, making them six, to suit the Indian climate and periodical rains; while the Greeks and Romans found the want of a name to denote the "later season," but not till they had separated, when the Greeks called it by no more distinctive name, *ὀπ-ώρα*; for practical purposes in their splendid climate finding it sufficient to divide the year into *θέρος* and *χειμών*; the Roman "auctumnus" was developed on Italian soil.

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[1] Pictet, *Orig. Indo-Europ.* I. 97.

As Pictet well points out[1] the Indo-European division of the year, besides corresponding well to their supposed country, also harmonizes with what from other sources we know of their employments. With a people mainly pastoral the second natural division of the year is the time of the return of the flocks for winter quarters. And when an agricultural succeeded to a pastoral age, no further distinction was required, because the grain is harvested in summer. A separate term for a fourth season does not become necessary until the time of the cultivation of fruit-trees, especially of the vine.

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[1] *Orig.* I. 107.

CHAPTER VI.

DYNAMIC CHANGE.

CH. VI.

Dynamic change to be briefly considered in order to distinguish its results from those of phonetic change.

I HAVE already said that it is not my intention to describe the construction of language. Phonetic change, according to my view, is due to the corruption of language: and now that we have ascertained what were the probable sounds, which, modified in different ways, became the frame-work of the different languages of the Indo-European stock, I might pass on at once to investigate those changes which mark the Graeco-Italian division. But I think it necessary first to give a few examples of Dynamic change; because without knowing something of the operation of the formative principle in language it is difficult, and sometimes almost impossible, to keep its results distinct from the mere corruptions produced by the destructive principle. This confusion is only possible among the vowels; the consonants are unaffected by dynamic change: and there is not much fear of confusion in languages where the vowel-system is almost perfect: in such languages the vowels in the main vary each in its own scale; for example, from a root whose vowel is *a*, a derivative is rarely formed with the vowel *i*, as is the case, e.g. where ἵππος is formed from AK: and the diphthongs are preserved uninjured, so that the different steps of vowel-modification can be kept distinct from each other: and such a language is the Greek. But this is far from being the case with the Latin. That has neither retained its diphthongs, nor kept the vowel-scales with anything like regularity. Therefore in treating of the most complex vowel-system of the Latin, it is necessary to give some clue by which to distinguish between those variations which were primarily the result of design and those which arose from indolence in articulation. It seems best to do this here, first, because the changes due to this principle are much fewer and simpler, and a knowledge of them will clear the way for the better understanding of the more complex problems of phonetic change; secondly, because the principle of growth must have originally preceded the principle of decay. I have already briefly sketched the general formative system of language—the process by which a root grew into a base. That growth is by accretions *from without,* and is always easily distinguishable from the processes of phonetic change. I now propose to describe some of the methods by which a root could be modified *from within;* not how e.g. the root πιθ could by adding a formative suffix become πιθ-ανο- and πιθανο- grow into πιθανός and πιθανότης and πιθανόω; but how by mere modification of existing elements πιθ could become πειθ: because it might be supposed that this change of ι into ει was of the same character as that of α into ε, or ε into ι. I ought however to say here that in the opinion of some scholars there was originally no difference between the two kinds. I believe that there was; but I will consider the question at the end of the chapter, after I have described the process.

The principal methods—Reduplication, and Vowel-Intensification:

Now the two principal methods of this modification of a root, without introducing any new element, are Reduplication and Vowel-Intensification. At first sight it might appear as though reduplication must be called an external modification. Undoubtedly a further syllable is added to the word: but absolutely no *new* element is added: μαρ-μαίρω (which is for μαρ-μαρ-yω) introduces no new idea to modify the old one; the old one is but expressed twice over, till it gets a new association.

It is true that from the nature of Reduplication there is not much likelihood of its results being confused with those of phonetic change, except in the case of roots which begin with a vowel. But these two methods of strengthening the root are so closely connected, that it is hardly possible to treat of the one satisfactorily without the other.

possibly also Nasalisation.

This is not the case with a third method, called nasalisation, by which e.g. √*fid* became *fi-n-d-o*, and √*λαθ*, *λα-ν-θ-άν-ω*. This variation of sound seems at first sight to bear so exact an analogy to the strengthening of the vowel already mentioned: e.g. as *πιθ* : *πειθ* :: *fid* : *find*—and this use of the nasal is so exactly in accordance with the view already given of its origin, that it was primarily a mere thickening of another sound, not itself a distinct sound—that we might see no reason for any hesitation in adding nasalisation to the methods already mentioned of strengthening the simple root. But when we examine more closely we shall see so much irregularity in the position of the nasal both in Sanskrit, in Greek, and in Latin, that we cannot help feeling some doubt whether after all it was not primarily a verbal suffix, which afterwards in certain cases slipped inside the root. Thus, for example, though we have *scindo* in Latin from √*skid*, yet in Greek we have *σκίδ-νη-μι*, and *σκεδ-άν-νυ-μι*: is the *n* in the Latin form the remnant of an affix *na* or *nu* which has been displaced? This is quite possible. I think it cannot be denied that there has been some displacement. But the opposite view is also possible: that from the endeavour to avoid the massing of consonantal sound late in the word, which was unsuited to the peculiar liquidity of the Greek language, the *n* in *σκινδ* was passed on; that *σκινδ-μι* became *σκιδ-να-μι*, the new vowel being essential to sound the *n*, if indeed it did not exist as a connecting vowel before the transposition. The lengthening of the second syllable may have been caused by the accent having at one time fallen upon it. We have then to decide which is the most probable of these two possible hypotheses: *by the first* the nasal is something which had no doubt originally a meaning[1], but which had probably long ceased to have that meaning, and had come to be merely a part of the machinery of grammar: by the second it was a sound which retained its dynamic character probably till after the separation of the nations. I incline to the latter view; a further argument for which is the fact that in Sanskrit and Greek this nasal is found principally in the present tense and those immediately connected with it: and the same thing is true of those roots which are strengthened by raising the vowel to a higher step in the scale: this harmony seems to bring the two phenomena under the same head: the meaning of the fact will be explained afterwards. Though this rule is not observed in Latin, yet there are traces of its having been so once: thus we have *fra-n-go* but *fregi*, *fractum* (ῥήγνυμι, ῥήξω, ῥηκτός): then the strengthened stem began to supersede the other, partly as in *pungo*, *pupugi*, but *punctum*, wholly as in *iungo*, *iunxi*, *iunctum*. This argument however loses something of its force from its being applicable to other verbs which have their present strengthened by undoubted formative suffixes, e.g. *ya*, as καίω (for καϜ-*yo*-μι), where the future is καύσω (for καϜ-σω), and the second aorist ἐκά(Ϝ)ην with no trace of the suffix; or *sko*, as βόσκω and *pasco*, where the suffix is also confined to the present. But the nasal is also found occasionally in the perfect stem, where no formative suffix is ever found: e.g. in πέπονθα (from √παθ), in κέκλαγγα (from √κλαγ): these seem quite analogous to πέποιθα or κέκευθα. The nasal is likewise found in some nouns as in πένθος by πάθος, βένθος beside βάθος; but these may be merely phonetic varieties, and as such they are explained by Curtius[2]: but we find στρόμβος apparently from √στραφ, and θάμβος from √θαπ[3], and others which seem analogous to λοιβή, λεῖψις, &c., which are instances of dynamic change. Now in the perfects it is certainly inconceivable that the nasal should be a part of a suffix: and though it is possible that *πένθος* was originally *παθ-νος*, it is eminently improbable.

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[1] See pp. 48—52.

[2] Note 21 in his *Essay* already referred to.

[3] See p. 126.

It is this use of the nasal, in analogy with recognised dynamic methods, combined with the improbability in most cases of its being a suffix, that is the main argument for nasalisation being included under the head of Dynamic change. But in the absence of positive certainty as to the nature of the nasal sound, I shall not describe the usage of it further, confining my attention to the two other undoubted methods of strengthening the simple root.

Reduplication.

Reduplication the oldest and simplest method.

This is probably the earliest, certainly the most natural, method of expressing greater intensity of feeling. But for this very reason, because it is the earliest, the traces of it in Greek and Latin are smaller than those of the other more refined and subtle methods of producing the same result, which have gradually superseded it. These traces are, as might be expected, most common in words which are obviously immediately onomatopoetic: e.g. *ἀλαλάζω*—*ululo*, &c. And indeed the greater number of examples adduced by Prof. Pott[1] to prove the wide extent of this principle are derived from the Tartaric or Oceanic speeches. In the ever-varying languages of savages, based almost entirely on *conscious* onomatopoeia, Reduplication is almost the only method employed to strengthen the expression of an idea. Thousands of examples are given by Pott. So also with children; every one must have observed how naturally they form a lan-

Evidence of this derived from the language of savages and of children.

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[1] In his book called *Doppelung als eines der wichtigsten Bildungsmittel der Sprache*, in which the question is treated in the most *thoroughgoing* and most unreadable way.

guage of their own on this principle: with them a watch is not a watch but a tick-tick, a railway-engine is not a railway-engine but a puff-puff. No doubt much of this is the traditional language of the nursery; but this is no real objection: it shews at least that a child apprehends ideas most easily under these forms. The first word which a child utters, mama, is a proof how natural it is. If it be objected that the barbarous dialects of savages and the semi-articulate lispings of children can supply no arguments for a scientific treatment of language, I do not admit this without modification. To argue on the etymology of particular words in some speech which has for centuries been, comparatively speaking, fixed by being the medium of a literature—to connect these with similar words in savage languages is, I admit, unscientific and dangerous. But surely we may base general principles of language on a numerous array of linguistic facts and methods of constructing words observed in innumerable savage dialects. And if there be any tendency shewn by such observation, it is the tendency to reduplication. Can we doubt that *mama* is the name for mother which comes first to the infant's lips in other lands besides our own? Whether or no there be any truth in the physiological explanation of the fact given by a learned German, that the lips of the infant are strengthened before any other organs by suction, and therefore it produces most naturally the labial sounds in mama, papa, baba, I will not stop to enquire: it seems not improbable. But the fact remains: mama is the most natural because it is the simplest combination of sounds that the infant can make. The single syllable *ma*, or *dà*, or *pa*, or whatever it be, is not language; it is a single sound which is not beyond the power of a brute; but when it is doubled we have a conscious attempt at language. When a child grows up he ceases to use the term mama, because mother is the term used in the literary dialect which he is taught; but if he were never taught that dialect he would go on calling his mother mama, just in the manner of savages who have no literary dialect. The child and savage in this respect stand on precisely the same footing; and are just the examples we need to shew us what are likely to be the first steps of any language before it has reached its literary stage.

The fact, that with us English the word *mama* is so often retained side by side with *mother*, may perhaps be explained by the fact that there is perhaps no other modern European people which shews so much tendency to (partly onomatopoetic) reduplication. Consider not merely the interjectional ha ha, tut tut, hoity toity, but also phrases which in some cases obviously arose from imitation of sound, though others shew, at least at present, no signs of such derivation. For example, ding dong, jingle jangle, tittle tattle, are obviously onomatopoetic: such derivation is not so clear in knick-knack, slip slop, riff raff, harumscarum, hugger-mugger, hurly-burly, hotchpotch, tag-rag, humdrum, helter skelter, and numberless others, which any one can supply for himself. I shall confine myself to examples of reduplication taken from the Greek and Latin: but these which I have given are familiar, and the principle, if proved for one language, is proved for all. It is curious that in nearly all these we have not simple reduplication, that is, we have not the same syllable exactly repeated. This is due, no doubt, to a half-conscious dissimilation: thus we may explain the thin vowel *i* being so commonly used in the reduplicated syllable. Where the difference is consonantal, it is more probable that words originally dissimilar have been made more like for the purpose of the jingle, by the conscious application of the opposite principle of assimilation.

Reduplication, first in imitative words, then generally,

In the Greek and Latin then we may with tolerable certainty trace the process in the imitative names of birds, &c. Thus we have *cuculus, turtur, ulula, upupa, ἔποψ, τέττιξ, κακκαβή,* and many others, where the name *is expressive* of the sound produced by the creature:

compare also *bulbul, tomtom,* &c.: other words express sound in general, as *tintinnabulum, murmur,* &c.: then the principle, which was perhaps at first restricted to sound, is applied more generally, e.g. in *πα-σπάλ-η* (already mentioned[1]) in Ταυταλος, probably reduplicated form of ΤΑΛ to endure, which change of λ to ν before τ, in Ταρταρος, which may be from ΤΑΡ to bore, i.e. the very deep hole; *κάρκαρον,* the Latin *carcer,* is not so clear: *κοσκυλμάτια* and *quisquiliae* mark contempt by their reduplication, things that are pulled incessantly into pieces: *cincinnus* and the weaker *κικιννος* are not clear, but may be contemptuous: and I can only point to the reduplication in *furfur, papaver, cucumis,* &c. *Quisquis* is perhaps more than reduplication; it is, so to speak, the first and last term of a series *quis, quis......quis,* which in Latin is no longer answered by a corresponding antecedent demonstrative, as it is in Sanskrit[2].

and alliteration.

Prof. Pott is probably right in thinking that he sees a relic of this principle in that fondness for alliteration which prevailed so much among the early Latin poets, Ennius, Naevius, and Plautus. They conceived that their idea was more fully expressed by repetition of the same syllable or syllables, even though the sense was not clearly and directly intensified, as in the case of reduplication. How curiously they laboured at this process may be well seen in the really remarkable fragment of Naevius, from the *Lycurgus,*

> Alis sublime alios saltus illicite ubi
> Bipedes volucres lino linquant lumina.

In these two lines the syllable *al* occurs twice, *li* six times, *bi* twice, *es* twice, *in* three times. And yet the alliteration is so cleverly managed by reproducing the same syllable generally in different parts of the words, that in a rapid reading we are only conscious of a general harmony of sounds very pleasing to the ear. It is only on close examination we perceive how artificial the process has been. *Summa ars celauit artem.* Commonly however the effect is much more obvious: in Plautus it is exceedingly frequent and generally without much reason; no end seems to be served by it: it has become apparently a mere trick of composition. Lucretius also has much of it, and it harmonizes well with his simple style; e.g. in his description of Sicily, as "multa munita uirum ui," or in the line, "mortalem uitam mors cum immortalis ademit[1]"—which indeed is rather an instance of an idea wonderfully intensified by reduplication than of alliteration. Even Virgil did not altogether disdain the artifice. In his

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[1] p. 104.

[2] *E.g.* in the following line (Nala 5, 11):
Yaṁ yaṁ hi dadṛiçe teshâṁ, taṁ taṁ mene Nalaṁ nṛipaṁ.
Quemquem enim uidit eorum, *eum eum* credidit (esse) Nalam regem.

Neu patriae ualidas in uiscera uertite uires

a certain strength is no doubt given to the line by the hammer-like beats of the *v* sound. Alliteration is found much more rarely in the Greek poets. Yet a perfect and most effective example may be borrowed from the artificial Alexandrian school in the well-known and exquisitely beautiful lines of the Epitaphium Bionis[2]:

αἰαῖ ταὶ μαλάχαι μὲν ἐπὰν κατὰ κᾶπον ὄλωνται
ἠδὲ τὰ χλωρὰ σέλινα τό τ' εὐθαλὲς οὖλον ἄνηθον
ὕστερον αὖ ζώοντι καὶ εἰς ἔτος ἄλλο φύοντι·
ἄμμες δ' οἱ μεγάλοι καὶ καρτεροὶ οἱ σοφοὶ ἄνδρες,
ὁππότε πρᾶτα θάνωμες, ἀνάκοοι ἐν χθονὶ κοίλᾳ
εὕδομες εὖ μάλα μακρὸν ἀτέρμονα νήγρετον ὕπνον.

To begin with the last line: clearly much of its matchless length and strength is derived from the double *ευ*, the double *μα*, and the fourfold *ον*. I am speaking of course only of the artificial helps, and not ignoring the power of the simple wording. But a careful examination will shew that much more of the melody of the entire passage is due

[1] III. 867.

[2] Moschus, III. 101—106.

to artificial aid. First of all the passage—naturally in consequence of the simile—divides itself into two equal parts of three lines each. The leading note of the whole is the syllable *ον*: it occurs in every line but one, eleven times in all. But in the first two lines of each half the syllable *αν* occurs—once in the first line, once in the second, once in the fourth, twice in the fifth, but not in either the third or the sixth. In each half the *αν* dies out by degrees, making way for the *ον*, which reigns triumphant in the last line of each. Now it is quite true that *a* is an older and stronger vowel than *o*: but in Greek, as we shall hereafter see, *o*, in consequence perhaps of its broader sound, is constantly used as a stronger modification of *a*. Therefore the change from *αν* to *ον* in this passage is a rise in the scale of sound, marking, as I believe, the rise in the intensity of the pathos. And as if to point this out more clearly, the poet whilst commencing the first clause with *αι* four times, in the corresponding line of the second clause has written *οι* five times, repeating it again twice at the end of the fifth line, after which we have neither *αι* nor *αν* again. Nay, even though this may be fanciful, I cannot help thinking that the writer meant to give the key at the end of the first line, where we have the ascending sound, *αν-*, *ον-*, *ων-*, the last not occurring again. Be this as it may, the general principle is, I think, unmistakeable, though it is so subtle that I for one had read the passage many a time before I perceived it[1].

These examples of alliteration are no proof of the use of reduplication as a formative principle, but they shew the natural bent of the human mind to intensify an idea by repetition of sound. I now pass on to cases where we find reduplication employed to intensify either the quality

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[1] Alliteration of the most obvious character occurs to excess in Icelandic. For some curious examples of it in old English, where it is common enough, see an *Essay on Alliterative Poetry*, by the Rev. W. W. Skeat, originally printed in Vol. III. of Bishop Percy's Folio MS., ed. Hales and Furnivall.

Slight traces of the formation of superlatives.

or quantity of particular words and roots. Here we might most naturally expect to find it in the formation of the superlative; and such is indeed most common in savage dialects. It is also found, though not as a rule, in Sanskrit, e.g. *alpa* is little, and *alpâlpa* is very little. But if it ever existed in Greek and Latin, it has entirely passed away before historic times, when we find the requisite increase of idea expressed by formative suffixes. Yet even in them, as Pott has pointed out, a lingering feeling of the possibility of the process is seen in such words as τρισμέγιστος, τρίδουλος, and the Latin *triscurria.* Here we have reduplication, or triplication rather, in the spirit if not in the letter. A savage would have said δουλοδουλοδουλος. The more cultivated Greek could express the same idea with more dexterity. A further example is to be found in the rather artificial compound used by Callimachus in his very beautiful epitaph on Heracleitus,

ἀλλὰ σὺ μέν που,
ξεῖν' Ἁλικαρνασσεῦ, τετράπαλαι σποδίη.

A sort of reduplication again may be seen in the very common οὐδεὶς οὐ, *nemo non,* &c. These are all superlatives: in all these it is intended to express the strongest affirmation. And though here the reduplication is certainly not of the reason, since one negative drives out the other, yet currency was probably given to the expressions by the fact of their coinciding with the popular love for repetition of the same sound.

Regular formation of frequentatives or intensives.

Far more important for us, as entering more widely into the building up of the languages, are the traces still to be found in Greek and Latin of the systematic reduplication of primary roots to produce frequentative and desiderative verbs and, more rarely, nouns. In Sanskrit such verbs are regularly formed from every root, by reduplication. Thus √*budh* in Sanskrit means "to know:" *bo-budh* (or *bo-budh-ya*) denotes "to know frequently," or "to know well" (i.e. is either a frequentative or intensive verb), *bu-bodh-i-sha* is "to desire to know." It will be observed that in two out of these three verbs, suffixes *ya* and *sa* are added, over and above reduplication; it is possible that when they were first so used, they retained their primary sense, whatever that was; and so modified the meaning of the root as well as the reduplication. So much at least is certain, that *ya* distinguished an intensive from the desiderative which ended in *sa*. But it does not appear that *ya* can be connected with any root which would necessarily or even naturally convey the idea of intensification: or that *sa* conveyed to the hearer the idea of wishing apart from these compounds. Therefore to me it is more likely that when they were first thus employed they were purely formal, mere grammatical machinery. The spirit was in the reduplication. Turning now to Greek and Latin we find—besides such onomatopoetic verbs as *λαλαγεῖν*, *murmurare*, and many others—intensives or frequentatives, for one signification often runs into the other, thus formed; as *μαρμαίρειν*, "to flash," from √*μαρ*, originally to rub, and so to smooth down, polish. Similarly *παμφαίνειν* is an intensive of √*φαν*: the whole root is repeated, and the aspirate changed to the hard, and the dental nasal to the labial nasal according to rule. So also *γαργαρίζειν*, "to gurgle," from √*γαρ*, "to swallow" (the Lat. √*vor* for √*gvor* in *carni·uoru-s*, *uora-re*, but also *gul-a*, *glu-tire*, &c.): compare the Latin *gurgulio*. Likewise *ποι-πνυ-ω*, "to pant," from √*πνυ*, "to breathe;" *δειδίσσομαι* from √*δι*, "to fear;" *μερμηρίζειν*, and the Latin *me-mor*, *memor-ia*, &c. from a root which in Greek took the forms *μαρ* and *μερ*, and √*mor* in Latin, but which is to be referred back to an Indo-European SMAR: the Sanskrit alone has retained the S: thus *μερμηρίζειν* is "to be careful," intensified from the simple root which means "to remember."

It will be observed that in many of these examples the reduplicated syllable is strengthened; as in ποιπνύω, *Frequent loss of the original meaning.*

δειδίσσομαι, *μαιμάω*, to pant with eagerness, *κοικύλλω*, *ποιφύσσω*, *παιπάλλω*, *δαιδάλλω*: in the nouns *λαίλαψ*, whirlwind, from √*λαβ*, to seize, *μαιμάκτης*, whence the Attic month *μαιμακτηρίων*, probably in *po-pul-us*, the tree, from √*spul*[1], and others. In these there is little doubt that the feeling of their origin survived until historic times; that men were conscious in using these words that they were employing intensives, and felt their relation to the simple root. It is not easy to account for the (much rarer) strengthening of the radical syllable: in *ἀκ-ωκ-ή* from AK, something very sharp, in *ἀγωγός* and *ἀγωγή*, where the reason is not plain: though it is in *ὀπωπή* and *ὀδωδή*; and in the irregular lengthening *ἐδ-ωδ-ή* from ED, clearly on the analogy of the others. The accent, which in all is on the last syllable, may possibly have something to do with it. But there are others where we find the reduplicated syllable weakened, as in *μερμηρίζειν* and *mĕmor;* in *κίκιννος*, a curl, (compared with the Latin *cincinnus*, whence *Cincinnatus*), in *su-surrus;* in *κέκραξ*, *κεκρύφαλος*, a thick covering, in *τέτανος*, in *βέβαιος*, and *βέβηλος* (each from BA, the first that which may be gone upon with physical, the latter with ceremonial impunity), the radical vowel has been allowed to sink to *ε*: in *τιθήνη*, in *τιθός* and *τιθάσος*, tame, all probably from DHA to milk; in many Latin verbs *titillare* (compare Greek *τίλλειν*), *titubare*, &c., the vowel is the weakest of all[2]. In all such words the feeling of their origin was gradually passing out of the minds of men; the emphasis had ceased to be laid on the reduplicated syllable, as it must have been at first when it was the significant part of the compound; and hence the syllable became weakened. This is a good illustration of the change which passes by degrees over all language; that which was originally formative loses its signification, and becomes only mechanical; the living principle passes out, and deadness comes on. And this brings us to a numerous list of verbs where this deadness is almost perfect: in some the intensive or desiderative force has merely died out; in others the no longer significant form seems to have been used to express a different idea. Such verbs are *μιμέομαι* (Greek √*με*, Indo-European MA, "to measure"), which seems originally to have signified "I frequently measure myself," and thus, in a restricted sense, "to measure myself by some one, to copy or imitate;" where the frequentative force is perfectly lost. The Latin *imitor* and *imago* are not improbably blunted forms of *mi-mitor* and *mi-mago*[1], and so formed originally on the same principle from the same root, which is found in *me-tior*, and strengthened in *mensa* and *mensura.* As *μιμέομαι* stands by regular phonetic change for *μι-μα-yo-μαι*, it exactly corresponds in form to *bo-bhud-ya*, mentioned above.

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[1] See p. 104.

[2] See Leo Meyer, I. 417—429.

In such verbs as *διδάσκω*, *ἀραρίσκω*, &c., the intensive force seems not only to be lost, but a causal sense to have taken its place—unless indeed they are to be explained as desideratives—the terminational *σκω* corresponding to the *sa* of *bubodhisha*, so that *ἀραρίσκω* should mean "I desire something to fit," *διδάσκω*, "I desire some one to think." But it is more likely that these forms should be connected with another very important class of verbs: in the formation of which this same principle of reduplication is employed, but for a more limited object. I mean such verbs as *δίδωμι* and *τίθημι* in Greek. In these verbs it will be observed that reduplication is found only in the present tense and the closely connected imperfect; not in the future *δώσω* or the aorists *ἔδωκα* and *ἔδων*, whilst the reduplication of the perfect is different in its nature. But in the intensives, which I have instanced above, the reduplication passes through all the tenses, although their occurrence is not frequent. In fact, in them the reduplicated verb is practically a new root; in these others the

Reduplication employed to distinguish protracted from momentary action.

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[1] See however Corssen, *K. B.* 252.

reduplication is an accident of the present tense. How is this difference to be explained?

All language must of course be able to distinguish the incomplete from the complete stage of action, the "is doing" from the "is done," the *γίγνεσθαι* from the *εἶναι*. But this distinction is not sufficient to express all our conceptions with sufficient clearness. In describing an incomplete action we require often to express whether the operation is over in a moment or requires time; whether it is momentary or lasting—to distinguish the "I do" from the "I am doing," the *γενέσθαι* from the *γίγνεσθαι*. Thus then we have three stages of action, so to speak: the Momentary, the Continuous, the Completed. And each of these stages ought in a perfectly logical language to have its own three sub-divisions in time, the past, the present, and the future. That is, it should possess nine forms produced by internal modification of the root, with the help of such suffixes as have lost their original signification and have become mere parts of the machinery of grammar; not by periphrases, as in seven out of nine times in the forms by which the English denotes the nine distinct ideas; thus:

	Present.	*Future.*	*Past.*
MOMENTARY.	I do.	I shall do.	I did.
CONTINUOUS.	I am doing.	I shall be doing.	I was doing.
COMPLETED.	I have done.	I shall have done.	I had done.

Unfortunately, historical investigation of the development of language shews that in the early stages of growth inflexions, derivatives, and the rest of the stock of grammar, are not formed to meet previously-felt logical needs. The order of the process is just reversed. A language develops numerous inflectional and formative suffixes which are vague and undefined in their meaning. The probable origin of these suffixes has been already discussed at some length: if they were pronominal there can be no doubt of their original vagueness. If they were common roots something must be deducted from the argument. But even if "standing," "going," or "following" were the original meaning of some of these suffixes, these meanings, though more special than mere indications of place, are little fit to express with exactness nice distinctions of thought. It is only later, when the need for more accurate expression is felt in consequence of the development of thought and feeling, that these forms found ready to hand are taken and restricted to the expression of distinct logical categories[1]; still not so entirely but that some in every class refuse to be bound by the restriction, and retain their old free but indefinite meaning. An example will make my meaning plain. Take the numerous derivative Greek and Latin verbs in *-sco*. These are commonly called Inceptives; and the majority do denote the beginning of an action. But there are very many, and those apparently very old verbs, in both languages where there is no inceptive meaning to be seen, neither are there any traces that it ever existed. Such verbs are *βόσκω, φάσκω, θρώσκω* in Greek, *pasco, nascor,* &c. in Latin. These are in use quite simple verbs, whatever the origin of the suffix may have been[2]. And it is very possible that this suffix and many others existed, before the need for inceptive verbs was felt, with a vaguer meaning, which partly for that very reason, partly through lapse of time, is not now certainly discoverable. Such instances force us to believe that the changes of form in language are not to be explained by reference to an arbitrary list of logical ideas; and consequently—to return to our present subject—we shall not expect to find in any language exactly the same number of forms as that of the above-mentioned categories. Most languages possess far fewer: some few (especially the Greek) have more, but these new forms differ for the most part from the old only in being produced by additional tense-suffixes, whereas the old were not, with the exception of the future, which always had *sya*. Such later forms are the first or weak aorist, the weak or active perfect, the first passive future; which express no modification of the radical idea not previously given by the older and simpler forms. The Sanskrit possesses nearly all the forms, and the traces of them which exist in the German language lead us to the belief that they were Indo-European. But the Hindu differs from all other people of the stock. He was not as the Greek or as the Roman. The genius of the Hindu people was contemplative, dreamy, mystical—not logical, as that of the Greek[1]. Accordingly the Sanskrit has preserved nearly all the grammatical forms which we find in Greek. But it has preserved them with little trace in common use of that nice distinction which we always find in Greek usage. How then are these distinctions of time and order preserved in the Greek? How did they succeed in distinguishing, by simple modification of a root, the momentary, the protracted, the complete performance of that which the root expressed? Principally by means of that which will form the second point of our description of the growth of language—by Vowel-increase or intensification. For example, take the Greek root *λιπ*; it denotes "to leave momentarily." By increase of the vowel *ι* to *ει* we get *λειπ*, "to leave during a protracted time." Increase again to *λοιπ*, and we get the completed action. Thus *ἔλιπον*, the aorist is = "I left at a particular moment;" *λείπω* = "I am leaving," as a continued action; *λέλοιπα*, "I have left and done with it." It cannot indeed be asserted that this vowel-intensification is thus applied quite regularly in all cases; but this variation will be considered in its proper place. Nor again is it the only method by which to express the greater fulness of idea involved in continuous as contrasted with momentary action; or, in grammatical phrase, to strengthen the Present Stem. Reduplication is also used for this end; and so at last we get back to the verbs *δίδωμι* and *τίθημι*.

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[1] Compare Curtius, *Comp. Philology and Classical Scholarship*, p. 20.

[2] See the explanation suggested at page 50.

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[1] Thus the Hindu could brood over an idea: for example, he could believe firmly in the immortality of the soul at a time when any such idea was put forth by the best of the Greeks with stammering lips. In the Bhagavadgîtâ, the genius of the Sanskrit language for variety of expression, enormously rich though it be, seems almost insufficient to express the intensity of the poet's belief. "Unborn, unchangeable, eternal, old of days," he cries, "the spirit dies not with the dying body...... Like as a man casts aside vestures worn with age, and takes to himself others new: so casting aside its worn-out bodies, the indwelling spirit enters yet new ones......Impenetrable is it, unconsumable, not to be wasted by water, not to be parched by wind; enduring, all-pervading, firm, unshaken, eternal; invisible, inconceivable, unchangeable." We shall not find anything like this in Greek: the strength of the belief is all Indian. But it is quite possible that a Greek would have expressed such belief as he possessed more logically: for logic is one of the many gifts for which the world has to thank the Greeks: the logic of the Hindu has never spread beyond India.

The root of *δίδωμι* is *δο*, found in *δόσις*, *δοτήρ*, &c. This has been already strengthened to *δω* in the momentary tenses, the mom. fut. *δώσω*, the mom. past, i.e. the aorist *ἔδων*, for which the fuller form *ἔδωκα* was early substituted; consequently to express the continuous present and past, i.e. the imperfect, we require a new method; which is reduplication, and we get *δίδωμι*, *ἐδίδουν*. There is no momentary present in use in Greek: a momentary action when described is commonly already past, and is therefore naturally expressed by the momentary past: or if it is some deed which is done once for all, it can then be expressed by the completed past. Commonly however the continuous-present is sufficiently exact for ordinary use: when indeed it is essential to point the momentary character of the action, the momentary past is used[1].

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[1] So Eur. *Med.* 272:

σὲ τὴν σκυθρωπὸν καὶ πόσει θυμουμένην
Μήδειαν εἶπον τῆσδε γῆς ἔξω περᾶν.

Here the momentary character of the order, "this instant I bid," implies the immediate obedience it is to receive. The common explanation that such tenses express a long formed purpose in the past is surely out of

There is no permanent future; *δώσω* being regarded as sufficient to express both instantaneous and continuous action. Similarly there is no perfect future; we must have recourse to the periphrasis *δεδωκὼς ἔσομαι.* In verbs in *ω* however we find this future in the passive—the future which rejoices in the mysterious title *Paulopost.* Thus *λελείψομαι* is exactly "I shall have been left." To form all the tenses of the completed stem reduplication is again employed, distinguished from that of the protracted by the vowel of the new syllable, which is always *ε*: and so by analogy this method crept into use even for those verbs whose stems were already distinguished by the subtler method of vowel increase, as *λε-λοιπ*: a fact which shews that the meaning of vowel intensification must have been fading out of the Greek mind. Owing to the great length of this tense—*δε-δω-κα-μι*—the termination fell off without any compensatory lengthening of the connecting vowel being felt to be required, as it had been in the present of the protracted stem. One verb however in Attic forms the completed present with long *ω*, probably from its shortness, *ἥκω*, "I am come;" and they are common in Doric; thus Theokritus uses *δεδύκω, πεφύκω,* and many others.

Other examples of a present stem strengthened by reduplication are *γίγνομαι* for *γι-γεν-ο-μαι,* root *γεν* (*γενήσομαι, ἐγενόμην*); *μίμνω* for *μι-μεν-ω,* existing beside *μένω,* mom. pres. from √*μεν*; *πίπτω* for *πι-πετ-ω,* root *πετ,* Doric aor. *ἔπετον* from which *ἔπεσον* is a weakening: *κέκλομαι, μέμβλομαι,* and many others. In Latin we have *si-sto,* reduplicated from √*sta*; *gigno* formed like

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place in passages like this. The tense is used because it is the nearest to the wanting one which would have exactly expressed the meaning; and distinctions of time are therefore disregarded. So in line 245 of the same play:

ἀνὴρ δ', ὅταν τοῖς ἔνδον ἄχθηται ξυνών,
ἔξω μολὼν ἔπαυσε καρδίαν ἄσης.

Here I do not believe that it is the "indefinite frequency" of the action *which* is expressed, but its momentary character.

γίγνομαι from √*gen, gi-gen-o; sero* is *se-so*, from √*sa* (supine *satum*), an Indo-European root, whence we derive our "sow;" *bibo* from √*pa*, by weakening of *p* to *b*, of which there are other examples found; thus *Boblicola* for *Poplicola*, or as we generally have it with one *p* only weakened, *Publicola;* √*pa* is supported in Latin by *potus, poculum*, &c. It will be observed that in most of these Latin verbs the reduplication, instead of confining itself to the present, has passed over the rest of the tense-system. There are examples of this in Greek also. Thus we find διδάσκω, διδάξω (contrast μι-μνή-σκομαι, fut. μνή-σο-μαι, with no reduplication), ἐδίδαξα, nay even the perfect δεδίδαχα; where the treble *d* must have been a sore trial to the Greek sense of euphony. These cases might undoubtedly, as I said before, be explained as intensive verbs, which therefore retained the reduplication through all the tenses. But there is, at least now, no intensive force in them, and it is not very likely that they ever were such. I prefer to explain them on the same principle I endeavoured to set forth above: that as time went on the meaning of the process by which the present stem was strengthened faded out of the consciousness of those who used it. Use, the ultimate court of appeal in all questions of language, did not require in these verbs the distinction between the stronger and weaker form: the stronger superseded the weaker, and the other tenses were formed from it as though it had been the original form.

Loss of the original object.

Vowel-Intensification.

We may now pass on to the fuller consideration of the second, and much more important method of strengthening the idea contained in a root, that of modifying the radical vowel. It is obvious that this method, if carried out completely, could be employed only by a people whose perception of the distinction of sounds was nice and cultivated. Yet it is quite clear that the Indo-European race before its separation did possess a rising scale of all the vowel-sounds. This scale has been mentioned before[1]: it may be repeated here.

Orig. vowels.	First step.	Second step.
a,	*a* + *a* = *á*,	*a* + *á* = *â*,
i,	*a* + *i* = *ai*,	*a* + *ai* = *âi*,
u,	*a* + *u* = *au*,	*a* + *au* = *âu*.

The intensified vowel forms differ in different languages.

These new sounds were employed by the different peoples of the original stock under different forms according to their various phonetic laws, and with more or less of system and precision according to their different gifts. A complete list of all the substitutes is given by Schleicher[2]. Those employed by the Greek and Latin will come immediately under our fuller consideration. We may glance for a moment at those of some of the other nations, so far as they employed them.

Most recognisable in Sanskrit; and most regularly employed there.

First, then, Sanskrit remained the closest to the system of the original speech, only varying indeed from it by substituting *ê* and *ô* for the first steps of the I and U scales, respectively: in the *a*-scale it has not attained to any means of distinguishing the first or second steps; indeed the Indian grammarians say that there is no *Guṇa* of *a*, only *Vṛiddhi*, that is, no first step, only a second one[3]. One of the most important uses of the scales is the formation of nominal bases primary and secondary: thus from √*vid*, "to know," comes by regular ascent the well-known word *Veda:* and the second step (together with the suffix -*ika,* which I take to be formal) gives us *Vaidika,* "belonging to the Vedas," an adjective which (minus its final *a*) is now commonly used by English Sanskritists instead of the commoner "Vedic." A more full, indeed redundant, list of derivatives than the Sanskrit possesses by this method of vowel-intensification with formal suffixes, cannot well be conceived. The Greek and Latin have similar examples, as we shall see; but nothing like the fulness of the Sanskrit vocabulary. I have already said that it is in this power of forming bases, both nominal and verbal, and its marvellous facility in combining nominal bases thus formed, that the genius of the Sanskrit is especially manifested, as compared with the classical languages. It is not equally manifested in conjugation. Here we find what is perhaps its oldest application, namely to strengthen some verbal bases in those persons whose terminations are technically called weak. Among these are the three persons singular of the present. Thus from √*i* "to go" is formed, *émi,* "I go;" *éshi,* "thou goest;" *éti,* "he goes:" but in the plural, *imás,* "we go." This is exactly analogous to the *εἶμι, εἶ, εἶσι...ἴμεν*: compare also *δίδωμι* with *δίδομεν.* This phenomenon has been explained in different ways, into which it is not here the place to enter fully: the most satisfactory, if it could be fully applied, would be Professor Benfey's, who makes it the result of accentuation[1]. He lays down that the accent naturally falls on the modifying syllable of a word. Thus in *i-más,* "we go," the strong termination *mas* modifies and restricts the general idea of going to the particular going of some persons, more than two, and spoken of by themselves; therefore it is accented. But when certain terminations became weakened, e.g. *mi* from *ma,* they were unable longer to bear the accent; which then fell back either on the radical syllable and strengthened it, as *émi,* or on some additional modifying element, if such existed, as the reduplicated syllable in *dádāmi* (plur. 1, *dadmás*), or a formative suffix

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[1] See p. 48.

[2] See *Comp.* p. 160.

[3] These terms *Guṇa* and *Vṛiddhi* have become to a certain extent familiar to those who are not Sanskrit scholars, by their occurrence in treatises on comparative philology—more especially in England from their being used by the late Dr Donaldson. They have been, with good reason, generally rejected by later philologists: they are purely Indian, and do not express satisfactorily all the uses which can be made of the vowel-scales, by languages possessed of a fuller vowel-system than the *Indo-European* and Sanskrit.

Theories on the subject.

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[1] See his *Kurze Sanskrit Grammatik,* §§ 153, 154.

as *nu:* thus from *chi*, *chi-nó-mi*, but plural *chi-nŭ-más* (compare *δείκ-νῡ-μι*, *δείκ-νῠ-μεν*). Here, however, the Greek is not in accordance with the Sanskrit, for *δίδομεν* and *ἴμεν* throw their accent back in accordance with the common Greek rule: though in many minute respects the accentuation is the same in the two languages. It is of course possible that here also it was originally the same, and that in course of time, as the reason of the variety became forgotten, the distinction in accent passed also out of use[1]. Such an explanation is very possible and quite in accordance with analogy: but the usage even of the best preserved languages of the Indo-European family is too confused to allow us to regard the theory as proved. The laws of accent are very different for different branches, e.g. for the Sanskrit, the Greek, the Latin, and the Teutonic: very often there is so much difference in the same language as to lead us to the conjecture that there must have been an older law in the language different from that which we find prevalent. Now this fact undoubtedly gives reason to suppose that there was one common law of accent for the Indo-European race, from which all the nations have deviated in different ways. But even if this was so, as is quite probable, it is by no means necessary that there should be any connection between accent and vowel-intensification. Each is a possible method of expressing that the speaker regards a certain syllable of a word as important: it is quite likely that the two originally existed side by side, acting to the same end, but in quite distinct ways[2]. The tendency at last, no doubt, is towards the destruction of quantity by accent: this we shall see later on in Latin. But that quantity and accent may be found in the same word on different syllables is obvious from the classical Greek.

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[1] The accent is still found on the last syllable in *φαμέν* and *ἐσμέν*, but these two verbs are again discordant with the Sanskrit in having *εἰμί* and *φημί*; even though the latter has the radical vowel increased in the singular.

[2] *See Corssen*, I. 626, &c.: where a good and clear summary is given of the views which have been held on this matter.

Not one-tenth of the Sanskrit verbs belong to the second conjugation, which distinguishes the strong and weak forms. The first class of the first conjugation, which alone comprises more that half of the verbs in the language—probably however the latest in time, like the Greek verbs in *ω*—agrees with the Greek in raising the vowel (of *i* or *u*, but not *a*) one step to form the present stem. Thus from *budh* we have *bodh-â-mi*, by the side of *πυθ*, *πεύθομαι*. The first and second increase are found in the formation of the Sanskrit perfect, without regard to the conjugations, in accordance with special rules which may be found in any Sanskrit grammar: thus the perfect of *budh* is *bubodha*, where there is no further increase from the present stem *bodh;* compare the Greek *φυγ*, *φεύγω*, *πέφευγα*: but verbs ending in vowels generally exhibit the full scale: thus *dru*, "to run," present *drav-â-mi* (for *dro-â-mi*, by a regular euphonic law), perfect *du-drâv-a* (for *du-drâu-a*). Further illustrations from Sanskrit would be out of place here. I have thought it necessary to say so much, because the extent to which the principal vowel-change pervades the whole system of language is more fully seen in the Sanskrit than in any other of the sisters; because, when Sanskrit was at its fullest development, that principle remained living and productive in all the base-formations; whilst in other languages its regular action can with difficulty be traced except in the formation of verbal bases; in some languages, as the Latin, scarcely there.

Vowel-scales in the Gothic;

The substitutes in Gothic for the different steps of the vowel-scales may be interesting to students of English. We find in the *i*-scale *i*, *ei*, *ai*, in the *u*-scale *u*, *iu*, *au*. The reason of this variation is that the Gothic has no *ā* to employ in the second step; and therefore substitutes *e* and *i* for *ă* in the first steps. Thus, from √*stig*, to climb, Indo-European STIGH, Greek √στιχ (whence στείχω, στοῖχος), we have present *steiga*, I climb, perfect *staig*, I clomb; from *bug*, to bend, or "bow," Indo-European BHUG, to bend (Greek *φυγ*, and Latin *fug*, to fly, i.e. to bend out of the original course: compare the Greek *τροπὴ* in the same sense, and *τρόπαιον*[1]), we have *biuga*, I bend, and *baug*, I bent. In the *a*-scale the Gothic (like the Greek, as we shall see below) distinguishes the first from the second step by employing *ê* for the first—the O. H. G. keeps *â*—and *ô* for the second; thus *lat* (German *lassen* = to "let"), *lêta*, *lai-lôt*.

and in the Lithuanian;

Lithuanian, which possesses *e* besides *a* as a radical vowel in the *a*-scale, has *a* for the first step and *ô* for the second, like the Teutonic family. In the *i*-scale it has *ei* or *ë*, the last a modification of *e* produced by sounding *a* immediately after it, and consequently always long[2]. The second step is *ai*, like the Gothic. In the *u*-scale we find first *au* or *û*, which is a long *o* with the same parasitic *a* as above, second *āu*. *Au* and *āu* resemble the Sanskrit in becoming before vowels *av* and *ōv* (Sanskrit *âv*) respectively.

It is not necessary to go further into the different languages to establish the principle. Sufficient examples have been given from the most important (except the Greek and Latin) to shew that the power of intensifying ideas in this way is as old as Indo-European times; and we may now pass to a fuller consideration of the principle among the Greeks and Italians[3].

in Greek and Latin. (i) *the A-scale.*

Difficulty of distinguishing the two steps.

In the *a*-class an obvious difficulty occurs. How is it possible to distinguish the two steps when $a + a$ becomes $\bar{a}$, and $a + \bar{a}$ has no further symbol to represent it? The effects of this difficulty in the Latin will be obvious when we look at the irregularity of the cases where the *ă* has been intensified. Thus we have *ācer* from the root *ak*, which is short in *ăcies*, &c.; but *măcer* is still short from *mak*, *măcies;* the causal of the same root *mācero*[1] is long, but *lăcero*, similarly formed, is short: perhaps in the case of *măcero*, the formation of which is denominative rather than causal, the *a* has been lengthened on the analogy of causals like *plāc-are* from *plăc-ere*, which is formed quite regularly on the Sanskrit, and probably Indo-European principle. *Săgax* stands by *sāgus* and *sāgire*, *păc-iscor* by *pāc-s* (*pax*, *pāci-s*), *căueo* by *cāui*, *plāga* and *πληγή* are Graeco-Italian from √*plag* shewn in *ἐπλάγην*: by *frăgilis* we have *suffrāgium*, by *ăgo*, *ambāges*. From these and other examples which could be given it would be impossible to lay down any rule for Latin use in this scale when the *a* has been retained and not weakened to *e*. If we turn to Greek we shall find more clearness. Thus we have from the root *ἁδ* (Indo-European and Sanskrit SVAD, compare Latin *sua*(*d*)*vis*), *ἁδεῖν*, *ἕᾱδα*; from √*λακ*, *λăκεῖν*, *λέλᾱκα*; from √*λαθ*, *ἔλăθον*, *λέλᾱθα*, in the older (Doric) form and in Doric perfects generally. Thus we see the *ā* restricted regularly to the perfect; the presents being otherwise strengthened (*ἁνδάνω*, *λάσκω*, *λανθάνω*, &c.). The long *a*, which sometimes appears in the present of these verbs, e.g. √*κρăγ*, *κρᾱζω*, *κεκρᾱγα*, is phonetic, not dynamic; *κράζω* = *κρăγ-y-ω*. The Ionic *η*, the weakened form of *ā*, is similarly used as the rule for the perfect, not the present; for cases like *πτήσσω* can generally be explained like *κράζω*: that is, *πτήσσω* = *πτăκ-y-ω*; compare the compound aor. *κατέπτακον*. There are however exceptions to this rule; thus we find *πήγ-νυ-μι*, perf. *πέπηγα*, where there is no vowel difference: in other cases, e.g. *ῥήγνυμι*, where *η* is found in the present, we have a further increase in the perfect, as *ἔρρωγα*. On the whole then it seems allowable to regard *ā* and its dialectic equivalent *η* as occupying the highest step in the *a*-scale.

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[1] *Gr. Et.* no. 163.

[2] See Schleicher, *Comp.* p. 135, or his Lithuanian grammar, where the excessively difficult and numerous vowel-sounds are fully explained.

[3] Examples are taken principally from Leo Meyer, I. 131—162, Corssen, I. 348—628, of the 2nd edition, in which this part has been enormously expanded.

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[1] Corssen however, I. 395, separates the two words.

CH. VI.

Different methods of distinguishing them in Greek; especially the employment of the existing division of A into a, ϵ, o.

Then how did they represent the first step and keep it distinct from the second? Sometimes, as we have seen, by strengthening the verbal stem in different ways; either by reduplication, as *ἵστημι* for *σι-στα-μι*, or by nasalisation, as in *ἁ(ν)δ-άν-ω*, or by suffixes, as in *λά(κ)-σκω*, *ἅπ-τω*, *φαίνω* for *φαν-yω*, *ἄγ-νυ-μι*, &c. But very frequently they employed a vowel-variation ready to hand, one originally phonetic only, but capable of being applied to distinguish different shades of meaning[1]; that division of the *a* sound, so often mentioned, into *a*, *ϵ*, *o*, which will be fully described as soon as we come to phonetic change. Now *o* is a heavier sound than *ϵ*; so that while *ϵ* is employed for the present stem, the greater intensity of idea implied in the completed action can be expressed by *o*; as e.g. in *πέρθω*, *πέπορθα*; *στρέφω*, *ἔστροφα*, &c. But this more frequently is the mechanism employed in the formation of nominal bases. Thus by *πέρθ-ω* we have *πόρθ-ο* in *πτολίπορθος*; by *στρέφ-ω*, *στροφ-ή*, and *στρόφ-ο-ς*; by *ἔχ-ω*, *ὄχ-ο-ς*, and *ὀχ-ή*, and innumerable others[2]. Indeed this may fairly be called the most important of all the methods of forming nouns in the language.

A slight difficulty arises here from the fact that the ascent from *ϵ* to *o* is not always (indeed not generally) the entire process in the verb-formations on this method.

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[1] This faculty of language may be well illustrated from Prof. Curtius, note 21 on page 31 of his *Essay on Comp. Philology and Classical Scholarship*. He there says (Engl. trans.): "The distinction between *ἐχόμεθα* and *ἐχόμεθον* was surely at first purely phonic, but it subsequently got to be employed to separate the plural from the dual. And the Sanskrit termination of the first person dual *vahê* is most likely but a variation of the 1st pl. *mahê;* and scarcely any one would maintain that in the *v* there is really a significant mark of the dual relation (cf. *vayam*, plur. = "we"). Thus too I consider *πένθος* as a by-form of *πάθος*, one which the phonic tendency alone has brought forward. [See however, p. 163]. There was never any difference between *e.g.* *βένθος* and *βάθος*, although a more refined feeling of the language introduced one between *πένθος* and *πάθος*. This is in some degree also the case with the German "Ablaut" [*i. e.* the change of a vowel to another vowel of a different class according to certain laws], more especially in its application to the formation of words. It can be shewn that the change of *i*, *a*, and *u*, in the verb *trinken* was there before, and that it arose from very different reasons than the difference in the meaning of *Trank* and *Trunk*."

[2] See the full list in Leo Meyer, *Vergleichende Grammatik*, I. 110, &c.

Besides the perfect stem in *ο* and the present stem in *ε* we commonly find another stem in *α*: thus by *τέτροφα* and *τρέφω* we have *ἔτραφον*; by *ἔστροφα* and *στρέφω*, *ἐστράφην*. Now this stem, as expressing the simple momentary action, ought undoubtedly to be expressed by the weakest vowel; and so we find it in the other vowel-scales; e.g. from λιπ we have *ἔ-λιπ-ον, λείπ-ω, λέλοιπ-α.* Clearly we have this relation; as *τέτροφα* is to *λέλοιπα*, so is *τρέφω* to *λείπω*, and *ἔτραφον* to *ἔλιπον*. But *a* undoubtedly, as a rule, passes into *e*; and therefore we seem in this particular case to have a weakening and not a strengthening in the first step of the scale, though the second step is an increase of sound above the first. It may be that the "Sprachgefuhl" of the Greek was here for once at fault; and that the three separate forms being all to hand, *ε* and *ο* were taken, not unnaturally, upon the analogy of the *ει, οι,* and *ευ, ου,* of the other scales, in order to gain that distinctness which, as we have seen before, the Greeks prized above all other people[1].

Traces of the same method in Latin.

The Latin is not without traces of the same change. Though few and far between, compared with the abundance of the Greek, they are sufficient to shew that it inherited the same method as the sister language, though not the same power of developing it. Thus we find among the verbs the increase from *ĕ* to *ŏ*, in *mŏneo,* the causal (compare Sanskrit *mân-ayâ-mi*) by *me-min-i* (weakened from *me-mĕn-i*), *men-*(*ti*)*s.* If *man-e-o* belong (as has been already suggested) to the same root, we have here an example, I believe the only one in Latin, of the triple form in actual use, but with the distinction practically forgotten. Just like *mŏneo* is *nŏceo,* the causal of *nĕc* (in *nex, nĕcis*), Indo-European NAK. Passing to nouns we have *tŏg-a* from √*tĕg*; *prŏc-u-s*, "a wooer," by *prĕc-ari*; *sŏc-iu-s* by *sĕq-ui* and *ad-sec-la*, and others[1].

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[1] This difficulty is ignored by Schleicher in his *Compendium*, p. 62, where, in treating of the different intensifications of *α*, he makes *ε* to *ο* one of the first steps. To me it appears certainly a second step in the verbs mentioned above; and in nouns *ὄχος* stands to *ἔχω* just as στοῖχος (second step) is to *στείχω* (*στιχ*) and *σπουδή* to σπεύδω (σπυδ).

Advantage of the different symbols for long vowels in the Greek.

We have seen above that *η* has gained a place in several present stems, sometimes on phonetic grounds, in other cases perhaps by analogy. This gave the Greeks an advantage which they were not slow to use. Since *ω* : *η* :: *ο* : *ϵ*, another method of ascent in the *a*-scale was gained thereby. Thus from the root (Ϝ)*ραγ*, present *ῥήγ-νυ-μι*, they formed the perfect *ἔρρωγα*—in exact analogy, as has been already observed, with the Gothic *lat, lêta, lailôt*. This *ω* makes its way also into noun-forms; thus from *πτακ* (*πτήσσω*) we get *πτώκ-ς* "the hare" (the by-form *πτώσσω* is perhaps a denominative verb formed from it): so also *ἀρωγ-ός* stands by *ἀρήγω*, "to help" (root *ρακ*): and it occurs regularly in reduplicated nouns, as *ἀγ-ωγ-ό-ς* and *ἀγ-ωγ-ή*, *ἀκ-ωκ-ή*, and (perhaps formed on analogy with these) even *ἐδ-ωδ-ή* from the base ΕΔ. Sometimes the long vowel *ē* seems to be employed in the same way in Latin. Thus we have *fră(n)go, frēgi, ăgo, ēgi, păciscor* and *pă(n)go, pēgi:* together from *cilium* and *oc-cul-o*, we infer a root KAL to cover (found in *c(a)l-am*), from which we get *cāligo* and *cēlare*. *Sătus* has the vowel short, which is long in *Sāturnus*, and apparently changed to *ē* in *semen*. But with respect to the perfects the origin of the *ē* is not beyond dispute: it may be due to lost reduplication; whilst the other examples, beside being insufficient, shew no clear trace of method.

Quantitative increase.

Short *e* is raised to long *e*, in Greek rarely, as *μέ-μηλ-α* (*μέλω*), and in such cases as *τί-θη-μι* by the side of *τί-θϵ-μϵν*: but more commonly in Latin, where we find *sēd-es* (*sĕd-eo*), *tēg-ula* (*tĕg-o*), *lex* (*lēg-is*), and *col-lēg-a* by *lĕg-o*, *sērus* by *sĕries*; and among verbs *ēd-i* (*ĕd-o*). Here the root-vowel was in every case originally *ă*, as is shewn by the other languages: but it had changed into *ĕ* in Graeco-Italian times.

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[1] See Schleicher, p. 87.

Similarly short *o* is lengthened, again in Greek more rarely than in Latin: *ὄδ-ωδα* is lengthened from √*οδ*; *στώμυλος* stands by *στόμα*: and the *δίδωμι* class of verbs corresponds to the *τίθημι* class. In Latin *uox* (*uōc-is*) stands to *uŏc-o* in the same relation as *lex* to *lego*: perhaps however the *ō* here may represent *ā*: we have √*â* in Sanskrit. We find this change in the verbs often enough, as *fŏdio, fōdi, mŏueo, mōui*; but here the same remark must be made as about the *ē*: *persōna* is an increase of sound upon *sŏn-u-s*, and *sōp-i-o* above *sŏp-or*. In these two last cases the *o* comes from original *u*: the Indo-European roots are SVAN and SVAP respectively, but this does not affect the principle of the increase of the *o*. As a general rule it would seem that the Latin language preferred the simpler expedient of a merely *quantitative* increase of sound (*ă* to *ā*, *ĕ* to *ē*, *ŏ* to *ō*): while the subtler genius of the Greek chose rather a *qualitative* strengthening, like that of *ε* to *ο*[1].

(ii) *The I-scale.*

We may now pass to the *i*-scale, which may claim the merit of being the most perfect and least corrupted exponent of the scheme, both in Greek and Latin. Thus in

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[1] Mr Roby (*Latin Grammar*, Preface, p. xxiii) writes: "I have not followed Schleicher and others in the treatment of Latin vocalisation according to what for brevity I may call Sanskrit principles. This method applied to Latin seems to me to fail both in basis and result. Corssen's elaborate treatment of vowel-intensification in the first volume of his new edition is not more satisfactory: and on this point I can refer to Curtius (*Studien*, I. 2, p. 294), who, commenting on Corssen's sanguine view of the result of his medley collection of long vowels in root-syllables suffixes and endings, points out that vowel-intensification is after all only a name for the fact that we often meet with a long vowel when we expect a short one." I am not greatly concerned to defend Corssen in this matter: and with Mr Roby's pithy statement of the result of Corssen's work I agree: the cause, however, is clearly the extreme disorganization of the Latin vocalism, which prevents us from discovering clear traces of a method undoubtedly found in closely cognate languages, and therefore certainly once operative in Latin also, although in a manner which was early obscured, and is now hardly traceable. I may say that Curtius, in the criticism quoted above, seems to me to be referring to one part of Corssen's work only, the "Einlautige Steigerung," not to vowel-intensification in general: and even here specially to one point only, the long *a* in *erām*, *erās*, &c. Corssen compares (inter alia) *ἔ(σ)ησθα*, &c. in Greek: and refers the long vowel to this principle. This explanation is certainly not satisfactory: but I do not know a better. That of Schleicher, that *eram* (for example) = *es-ayā-m*, seems to rest on no good analogy.

Greek we have the already often quoted √*λιπ*, whence *ἔλιπον, λείπω, λέλοιπα*; and nouns formed at each of the steps, *λεῖψις*, (at least in compounds,) for original *λειπ-τι-ς*, and *λοιπ-ός*: √*πιθ, ἔπιθον* and *πιθανός, πείθω* the verb, the noun *πειθώ* and *πεῖσι-ς* (in compounds like *πεισίβροτος* applied to the sceptre, Æsch. *Choeph.* 362), *πέποιθα*, but no noun of the second step. Very frequently we do not find all the three stages exhibited in the verb; but there is generally some noun to supply the missing link. Thus from √*στιχ* we have *ἔστιχον* rarely, but *στίχες* (nom. plural); *στείχω* commonly, but no perfect in *οι*: we have however the noun *στοῖχος*, to shew that the principle of the change was consciously held by the language, even when not fully employed. So from √*ικ* "to look," or "seem," we find such forms as *εἴκτον*, the dual third person in *Odyssey* IX. 27; no present *εἴκω* in use, but *εἰκών* "a semblance," or "image:" and the second stage is evidenced by *ἔοικα*. Similarly from √*ι* "to go," we have *ἴμεν, εἶμι*, and *οἶμος*, "a way." √*κι* "to lie," is unrepresented in the simplest form, which is found in the Latin *quies*, but the first step is seen in the so-called perfect, but really present tense *κεῖμαι*, and the second in *κοίτη* and *κοιμάω*. Good Latin examples are hard to find; indeed there is probably no verb which exhibits all the stages, for the Latin verb had no form to denote the completed action, and expressed the perfect merely by reduplicating the simple base of the momentary action; often in later times by the suffixes *-vi* and *-si* for *fui* and *esi*, the perfects of √*fu* and √*es* respectively. It is to the nouns that we must look for traces of the second step, disguised of course by the Latin peculiarity of pronunciation, which changed *oi* into *oe*, and that sometimes into *ū*. Thus √*fid* produces *fĭdes*, *feidus* (in classical Latin *fīdus*), and *feido* (*fīdo*), *foidus* (*foedus*). There is *leiber* whence *liber*, with the second step *loēbertas* (Festus), that is *loibertas*. The root SPAK, to see, sank in Latin through √*spec* to *spic*: from this we find in Latin *picus*: the German "specht" shews that the *s* has been lost, as well as in our wood-"pecker:" and that *i* stood for *ei* is most probable from the Umbrian *peicos.* The long *i* in *suspicio* is probably due to the same change. We have the first step in *deico* (*dīco*) from √*dik*; from √*ĭ*, which is short in *ĭter,* comes *eire* (*īre,* "to go"): and we find in inscriptions also forms like *veivos* (*vīvus*), *leites* (*lites*), *deivos* (*dīvus*), *veicos* (*vīcus*), which is formed from the same root as Ϝοίκος; but while the Latin raises the radical *i* one step, the Greek jumps to the second. The second stage is seen in *moenera* (from *moinera*), which again passed into *mūnera:* and we find in inscriptions such forms as *oinos, coiravit, oitile,* which appear in classical Latin as *ūnus, cūravit,* and *ūtile.* In none of these cases, it is true, can we point to the radical vowel occurring in any Latin word, or indeed to the first steps *ei* in each case. Yet the analogy of *fides, fidus* and *foedus,*—coupled with the fact that the corruption in the Latin vowels is of such old date, that we cannot well expect many perfect examples of the principle, which yet the Italians must have once possessed in common with the Greeks,—may justify us in regarding them as isolated instances of vowel-intensification.

Occurrence of ai as an intensified form of i.

Not seldom (considering the small number of cases in which this vowel-strengthening is traceable in Latin) *ai* is found as an increase of *i,* by the side of *ei* and *oi.* These, as has been noticed by both Leo Meyer and Schleicher, are generally cases where the radical form had early fallen into disuse; and the intensified form was therefore used without any sense of its relation to the original root, a root which must have ceased to occur at an early period of the Graeco-Italian history, before the application of *ei* and *oi* to denote the first and second steps respectively had become the established rule. Thus we deduce an Indo-European root IDH, "to kindle," from the Sanskrit √*indh,* with the same sense (past part. *iddha,* that is *idh* + *ta,* in accordance with a euphonic law of the language). Now no word is found in either Greek or Latin which contains this root in its simple form; but several which contain it raised a step, that is to *αιθ* in Greek and *aed* in Latin. Such are *αἴθω*, *αἶθος* and *αἰθήρ*; *aed-es*[1], *aestus* and *aestas;* in the last two *d* has passed into *s* before *t* by the ordinary Latin rule. We must suppose therefore that at some very early period of the Graeco-Italian nationality the root *idh* was raised to *aidh*, from which came the above-mentioned words; that the simple form of the root then was lost, so entirely that no tenses formed from it occur under the verb *αἴθω*, of which only the present and imperfect, that is the present and past continuous, are found. The principle of the intensification is lost; the formal result alone remains. The increase of sound may be even older than the Graeco-Italian period, for we find from the same root (which however is very barren except in Greek and Latin) the Sanskrit noun *édhas*, "fire-wood," and the O. H. G. *eit*, "fire[2]:" in that case the root *idh* may have been lost immediately after the first separation of the Eastern and Western nations.

The Latin has some examples to shew where the original and the intensified base are both preserved: of course *ai* has passed into *ae*. Such are *mis-er* and *maestus:* perhaps also *imitor* and *aem-ulus:* a similar process of formation is claimed for *Scaevus* (*σκαιός*), *laevus* (*λαιός*), and *caecus*[3] from SKI, whence *σκιά* and our "sky" (through the sense of shadow, cloud, cloudy sky—natural in the north). Grimm's law is violated because of the initial *s*. A root IG, to shake, occurs as *ing* in Sanskrit: this would give by a natural transition the Latin *aeger*, *aegrotus*, &c.; the Greek *αἰγίς*, whether the shield or the thunderbolt, and *αἴγειρος*, the quivering tree[4]. *Caedo* may be raised from the same root as *σχίζω*: the original *k* is seen in *σκινδάλαμος*. *Laetus* may shew the same root as *priya*, dear, in Sanskrit, *φίλος*, Goth. *frijon*, our "friend." Whether *αἰών*, *aeuom*, are formed by the same method from I "to go" with suffix *-van*, seems to me doubtful. Quantitative increase in this scale is found to some extent in both languages, but more in the Latin. Thus from √*kli* (*ἐ-κλίθην*) we have *κλῑτυς* and *clíuos*, *κλῖνω* and *declīno*; *φθῖνω* is regular in Homer (though not in Attic, like many similar verbs): but *φθῑσίμβροτος* is curious in a base of that sort which nearly always follows the radical quantity: √*kri* gives *κρῖνω*, *crīmen*, &c.; √*vi* gives *uītis*, *uīmen*, and probably also *uīnum*, the name for the climbing tree first, then the produce of its fruit.

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[1] Was *aedes* "the place of a fire," taken by the Latins alone to denote a house, because of the fires necessary to counteract the malaria of the plains of Latium? Or was it originally, as in classical times, a temple, from the use of fire in sacrifice? Then it would pass to the general signification of "a building," and the plural "the buildings" be used for the more extensive family house, like *δόμοι* in the Greek tragedians.

[2] See Schleicher, Curtius, *Gr. Et.* p. 225.

[3] *p. 91.*

[4] Corss. I. 376.

(iii) *The U-scale.*

Perfect examples of intensification in the *u*-scale are more difficult to find, even in Greek. We have from √*ἐλυθ* *ἤλυθον*, *ἐλεύ(θ)σομαι* and *εἰλήλουθα*, where both steps occur. We have from √*φυγ*, *ἔφυγον* and *φεύγω*, but the perfect is only *πέφευγα*; nor does the higher form seem to occur in any noun. So also from √*συ* was formed *σεύω*, and from √*χυ*, *χεύω*, where the *υ* however passed into the digamma, which was lost in common Greek, and *χέω* remained: but we still have *χεύσω* in the future. Similarly from √*ξυ* is *ξέω*. From √*ρυ* and √*πνυ* we have, beside *ῥέω* and *πνέω*, *ῥεῦμα* and *πνεῦμα* as first steps, then *ῥοή* (for *ροϝη* that is *ῥου* + *η*), *πνοή* (*πνοϝη*, *πνου* + *ή*) for second steps: similarly *ξόανον* from √*ξυ*. The two steps are found without any radical form occurring in *σπεύδω*, *σπουδή*: it is probable however from the identity of meaning that the simple form is found in the Latin *stud-ium*, and there are examples of the transition from *τ* to *π*. So also we find *ἀκολουθος* beside *κέλευθος*, where the simple form is very uncertain[1].

In classical Latin all distinction between the two steps is lost, because both *eu* and *ou* passed into *ū*. From √*flu* we find *fle*(*u*)-*o*, where the *u* afterwards dropped out, as was natural between two vowels; though it might equally well, and perhaps at first did, take the vowel sound: from the same root we have *flou-ius,* a river, and *flūmen,* where the step is uncertain. There is the same uncertainty about *nutus* from NU; we have *ευ* in *νεύω*. According to Corssen the *u* has very frequently fallen out after *o*; e.g. in *po*(*u*)*-ena,* from PU, to cleanse, in *pŭtus* and the nominal verb *pŭto,* to clear, physically, a vine, and mentally, any subject thought over (*putare rationes,* to clear one's accounts, is transitional between the two), and the long *u* in *pūrus* and *pūnio* is doubtless from a similar *oe,* a diphthong which however itself more commonly arises from *oi.* Similarly from MU we have *mo*(*u*)*-erus* or *mūrus.* Corssen has recovered from inscriptions old proper names, such as *Teurisci, Leucesie* (apparently from LUK, whence *λευκος*), and the Greeks transliterated *Lucius* into *Λεύκιος,* which however may be only on analogy. *Ou* is found more frequently in the inscriptions, as *Loucina, Loucania, ious* (for *ius, iuris*), *ioudex,* &c. For *duco* we find *douco,* where we should rather have expected *deuco* as the first step: perhaps *ou* superseded in this and other places an original *eu,* by the assimilating force of the *u* upon the *e*[1].

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[1] See Benfey, *Gr. Wurz. Lexicon*, II. 319.

U intensified to au.

Just as in the *i*-scale we found an archaic increase to *ai,* so also we find *au* in the *u*-scale: a good instance is seen in *αὐξάνω* and *augeo,* the simplest form of which, UG, is preserved in *ὑγ-ι-ής* and Sanskrit *ug-ra,* "powerful." The sense "to increase" was probably the original one[2]; but while the simple form in Greek and Latin was restricted to bodily growth and health, the strengthened form retained the wider sense, and the connection between the two was lost. *Navis, ναυς,* may come from a root *nu* (Schleicher) or *snu* (Curtius); the original *s* however must have been lost in all the languages. The Latin *Aurora* was originally *Aus-osa,* a strengthened form from US, "to burn," already mentioned. SKU, to cover, is seen in *σκεῦ-ος,* and in *κεύ-θω* with the loss of the *s*: which has also fallen off in *cau-os*, *cau-ea*, *caulae*, &c., all apparently from the same root. From LU to wash (as in *lŭ́-ere*, and λύθρον), we have *lau-tus* (but in Greek λού-ειν): from RU, seen in ὠρύω, we have raucus: from PU to strike (Greek πα(Ϝ)-ίω) we have *pau-ire* and *pau-imentum:* from the other PU mentioned above we have *pa-eni-tet*, as well as *po-ena:* there seems to be even a third root of the same form, expressing rottenness, in *pŭ-tris*, *pa-edor*, and *pū-s*, *pū-tere:* it is the German *faul*, our "foul," in the old sense of crumbling, decayed, which it retains in Cumberland, e.g. Foulsyke: apparently also Foulmire, for foul mere, not far from Cambridge. The derivatives of KUP, to trade, are numerous, the simple form may be found in *cupio*, and is in *caup-o* and *cop-a*, where the change from *au* to *o* is regular: but a comparison of κάπ-ηλος would seem to shew that the original form was KAP: and this is confirmed by the Teutonic: in O. H. G. we have *chauf-an*, and also *kouf-ōn*, the modern *kaufen:* in Danish we have *Copenhagen:* the variations in English of this root are well known; the names "Chapman," "Copeman," and probably "Cooper;" the market places, "Cheapside," "Chepstow" (contrast Stow-market), "Chipping" Norton; and the verbs to *chaffer* and to *chop* (of horses, or of the wind)[1].

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[1] Schleicher, p. 93.

[2] *Gr. Et.* No. 159.

There is the same quantitative increase of U as of I; that is, we often find *ū* both in Greek and Latin, without being able to say it is a contraction of *au*, *eu*, or *ou*. Thus we have φύσις but φῦλον, κῠ́τος but σκῦτος, from SKU mentioned above: from DHU we have θῠ́ος but θῦμός, and in Latin *fūmus* and *fūnus:* we have *rŭber* and *rūpes*, *Rŭpilius* and *rūpes*, *pronŭba* and *nūbo*.

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[1] See Isaac Taylor, *Words and Places*, p. 394.

NOTE ON CHAPTER VI.

Prof. Whitney dissents from the view which I have given in this Chapter of Dynamic change. He writes[1]: "A marked tendency in the best modern researches, if we are not mistaken, is towards the entire elimination of the symbolical element from the history of the languages of our family, and the recognition of all internal change, whether of vowel or of consonant, as at first only the accidental accompaniment of external accretion, or its remoter euphonic consequence: even though sometimes seized upon later by the language-making faculty, and turned to account in a secondary way, or inorganically." In other words, he thinks that *all* so-called dynamic change was originally phonetic: as some changes (afterwards used dynamically) undoubtedly were. His arguments are put very briefly, but they deserve careful consideration, and are chiefly these:

(i) "Vowel change comes along with the ordinary means of external derivation." For example, in the instance given in the text, where *vid* is changed to *veda* and *vaidika*, there is in each case a suffix added, as well as a vowel-change[2]. What reason is there, he asks, to regard the vowel-change as all important, the suffix as mere machinery?

(ii) "Vowel-change is not to be brought into any definable relation with ideas or classes of ideas, as their expression." That is, if we take again an example already given, there is no intelligible gradation of idea conveyed by the modification of vowels in *fides*, *feidus*, *foidus*.

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[1] In a very courteous review of the first edition of this book, in the *Journal* of the American Oriental Society for 1870.

[2] This indeed is not always so. Thus in Sanskrit, from *Buddha* is formed *Bauddha*, a Buddhist, with no further suffix. Prof. Whitney will not hold, I imagine (with Sanskrit grammarians), that in such cases there has been a "lopa," i.e. that a suffix has been put on, only to be knocked off again. This shews that a suffix was not absolutely necessary: though no doubt it is far more often used than not.

In reply, I have no doubt that all suffixes once had a meaning. But it certainly seems to me that such meaning was commonly (if not universally) lost before the stage of language of which we are now treating. The Indo-European language, at the earliest period when we become acquainted with it, had passed out of the stage at which each formative accretion had a separate and intelligible meaning, when it could be stripped off again at pleasure from the root, and used separately. This question has been frequently raised already, and I can only refer back to what I have said at pp. 50—52, respecting the origin of the suffixes: see especially the discussion on *ma* and *ta*. Therefore it seems to me that the change of meaning must be looked for, either not at all or very slightly, in the suffix; and, either altogether or principally, in the vowel-change.

The second argument is more important. In the nouns it certainly must be allowed that the motive of the change is no longer traceable with any certainty. But in the verbs the vowel-change does seem to have been consciously used for a special purpose, that of denoting different stages of action. I grant that there are many irregularities in the application of the principle, chiefly in the *a*-class, but also in the others. Still, I think that the principle is sufficiently traceable: and its use is parallel to that of reduplication: that certainly must have been performed consciously at first; and this seems to me to remove any *a priori* objection to vowel-change having at first been conscious too. It may be said that changes purely phonetic in their origin have been employed afterwards dynamically. This I have myself assumed in the change of *A* to *a*, *e*, *o*. But if the change from *i* to *ai* and *oi* be phonetic, it is one which to the best of my knowledge has no parallel in any Indo-European language. It is an increase of sound which certainly requires some explanation. Sometimes vowels are modified by contiguous consonants: thus, in Gothic, *i* and *u* become *ai* and *au* before *r* and *h*. But this change of which we are speaking is not confined to any special combination; it occurs before any consonant indifferently. I have already said that I do not think it can be traced to accent: and that I hold Corssen's view to be probable, that accent and vowel-change were employed quite independently of each other.

The confusion of use in Greek and Latin, where the vowel-system had been increased by ĕ and ŏ, is much greater than in Sanskrit, which remained nearer to the original language. This shews that we are justified in not regarding the irregularities of later times as a conclusive argument against the regular application of the principle in simpler days. The lapse of time must tend ever more and more to obscure the "symbolical element of language." The principle of decay has been at work as now from the very beginning of all speech. But there must have been a creative epoch or epochs also.

Since then I seem to myself to see in these changes a dynamic principle, however often obscured, and as I know of no reasonable explanation which can be given of the change if merely phonetic, I still adhere to the account which I gave in my first edition. I consider, however, that the question is one of much uncertainty: neither view admits of any positive proof.

CHAPTER VII.

VOWEL-CHANGE.

Phonetic change due to two causes—Weak Articulation, and Indistinct Articulation.

WE have now cleared the way for the discussion of the nature and extent of phonetic variation in Greek and Latin—such change of sound as was originally caused purely by the desire for easier articulation, and was not intended to denote any modification of idea, though the new forms may in some few cases have been afterwards so employed. Two different sets of phenomena resulted from this striving for ease of sound. Either a new sound was substituted for the old more difficult sound; in which case we have the result of *Weak*[1] *Articulation:* or in consequence of a lazy, perhaps sometimes drawling pronunciation, an entirely new sound became heard in connection with an old one—a sound to which I have already applied the expressive term of Prof. Curtius, "parasitic;" such cases will be considered separately under the head of *Indistinct Articulation.*

Weak Articulation to be first considered under four heads.

Again, Weak Articulation may be viewed under four different aspects. In all the tendency is the same; but the results are different from the modifying effect of neighbouring sounds in certain cases. Sometimes there seems to be no such cause; here we have cases of pure

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[1] By the term *weak* I do not intend to imply any weakness in the character of the speaker. I mean that the organs are put into a position in which less exertion is called forth than the old sound requires: and therefore a new sound is the result. This, I think, may fairly be called weak articulation, whether the speaker be a lazy man who desires to save his trouble, or a busy man who desires to save his time, or an excitable man whose muscles are not under his own control. In each case the organs are not put into the position they ought to be in, but into an easier one.

1. *Substitution.*

weakening—the substitution of a weaker for a stronger sound; for no reason that we can see but the inability of the people to pronounce the old one, as in the case of the Greek spirants. Such weakenings are generally very old: the sound thus affected is found in a weakened form throughout the whole language, not merely in dialects of it. Sometimes, on the other hand, we find thoroughly capricious affections of particular sounds which generally remain unaffected, as for example when *α* in Greek is weakened to *ι*—a rare change, but not peculiar to any one dialect—or to *υ*, which is almost confined to Aeolic. But neither in the regular, nor yet in these last irregular "sporadic" changes (I adopt another term of Prof. Curtius) is there any visible effect produced by adjoining sounds: and this class of changes, the motive for which lies in the sound itself, will be considered first under the head of *Substitution.*

2. *Loss.*

When this substitution has gone to the utmost length and the sound has perished altogether; or where there has been no substitution, but a too difficult combination of sounds has been accidentally produced and one consequently has fallen out; or where a particular sound was either difficult, or disagreeable to the feeling of the language, to produce at the end of a word—the part which is always more exposed to phonetic influences than any other; under these circumstances we have our second head—*Loss.*

So far the tendency of the change has been all in one direction. We have had not only an easier sound produced by it, but also a weaker sound. The course of phonetic degradation has been down the list of sounds arranged in order of strength: and though the scale may vary in particular details for different languages—for example, the vowel-scale is not quite the same in Greek and in Latin—yet it remains constant for each language. We now come to a different cause of change—the influence of neighbouring sounds. Here the operation of the main principle is no longer uniform. It is true that the change always produces an easier sound: but it is a matter of indifference whether that easier sound is brought about by weakening a strong to correspond with an adjacent weak letter, as *δόγ-μα* from *δοκ*, *ποσσί* from *ποδ-σι*, or by strengthening a weak sound for a similar reason, as λεκ-τος from λεγ, *τέττα-ρες* from *τετ-Ϝα-ρες*. The change indeed is almost always from a stronger to a weaker letter, except in cases of inflection or formation, such as λέλεκ-ται or λεκ-τός: and in these it is clear that the importance of keeping the suffix uncorrupted was felt (both in Greek and Latin) to outweigh all other considerations; and therefore λεγ-τος did not become λεγδος, as might have been expected. But in all such apparent exceptions the great principle of phonetic change was kept in the spirit, though not in the letter. These variations are, as a rule, later than those mentioned under the first two heads: they are often historically traceable. They are also not so universal; not so essential a part of the character of the language as a whole. Rather they are among the distinguishing marks of dialects. No doubt "euphonic changes," as they are called in grammars, such as *δόγμα* and λεκτός, *fractus* and *segmentum* (from √*sec*), are found universally enough. But where the principle has acted to its fullest extent; where two sounds have not merely drawn nearer to each other, but have become identical; we commonly find its action limited to one or two dialects. Thus *τέτταρες* or *τεσσαρες* is Attic, but *τέτορες* is Doric, and *πίσυρες* old Ionic: *κτέννω* is Aeolic for *κτεν-yω*, but is not found in any other dialect. In all such cases we have to do merely with a growing tendency, spreading indeed more and more over the whole language, but acting most irregularly, attacking a combination of sounds in one word but leaving it in another, even in the mouth of the same speaker; yet still acting more frequently in one district than another, and so tending to produce a "dialect"—the title we give to the result of a bundle of tendencies often contradictory, and rarely fully developed, which is yet sufficiently distinct from other results similarly produced to require a separate name[1].

3. *Assimilation.*

Neighbouring sounds then affect each other, and thus modify the action of our principle of phonetic change. They do this in two distinct ways. First, when two dissimilar sounds meet, and it is difficult to pronounce both clearly, one assimilates the other—more or less perfectly—to itself: and so we get our third head—*Assimilation.*

4. *Dissimilation.*

Secondly, when two similar sounds occur close together, and where a considerable effort is required to place the organs of speech twice consecutively in the same or a similar position, the opposite result to the last is produced;—which gives us our fourth head—*Dissimilation.*

I shall consider the operation of these four tendencies on Greek and Latin together. I do so, partly because the relative strength and weakness of the two languages will be seen better in this way than if I treated them separately; but my principal reason is this: I hope in this way to make more evident the *reason* of the changes which I have to enumerate; to throw some light on the general principles of language, not merely give a list of the changes found in two. For these principles are universal principles: they act on every language, not least upon our own: and they will be best understood by observing their action in as wide a field as possible. I shall be obliged indeed to consider vowel-change and consonantal change separately, each under the four forms I have mentioned, because the attempt to combine them would practically create confusion.

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[1] Prof. Ernst Curtius, in his *History of Greece* (Vol. I. p. 27, Eng. trans.), says that Aeolic is not a dialect like the Doric and Ionic, on the ground that it varies in the different regions in which it is found, and has no universally prevalent type. I do not understand this distinction. Do the Aeolic of Asia and the Aeolic of Boeotia differ more than the Doric of Crete and the Doric of Syracuse? No doubt, if we regard a dialect as the result of homogeneous tendencies, we shall find many things contradictory in the Aeolic, which cannot be reduced to any "fixed law of sounds." But this is true of every dialect. Every dialect is sometimes strong, sometimes weak, even in the same class of formations, in consequence of the incomplete action of the tendencies which produced it. If these tendencies had been fully developed, it would have been no more a dialect, but a distinct language. In truth, instead of restricting the Greek dialects to two, it would be wiser to extend their number. Doric includes at least two very marked varieties, Aeolic three: of these, the Doric of Sparta differs not very much from the Aeolic of Boeotia: so that it would not be unscientific to speak of five distinct dialects, without taking into account the varieties of the Ionic. At any rate Aeolic has as *good a claim to* be a generic title as Doric. See page 28.

The following are the general results to which our investigation will lead us with respect to Greek and Latin. We shall find the first tendency—that which leads to substitution—is felt very considerably in both languages; that it affects the Latin vowels much more than those of the Greek; the consonants about equally; but not quite the same consonants in the two languages. The second is rarely felt in Greek whether among vowels or consonants, and is always more or less reducible to rule: whereas it is constant and highly irregular in its operation on the Latin. The third and fourth are utterly powerless over the strong Greek vowel-system: whilst they affect the Latin vowels more than those of any other Indo-European language: on the other hand, the Greek consonants have suffered more from Assimilation than the Latin.

The symbols of the Greek and Latin alphabets.

The history of the symbols employed in the Greek and Latin alphabets cannot be given at any length; indeed it does not properly belong to my subject: but a very brief account may be given, because we shall find in each language some symbols which do not denote Indo-European sounds. The Greek symbols so far as τ, with the exception perhaps of ξ, are Hebrew or Phœnician[1]: Prof. Key has pointed out in his treatise on the Alphabet, that the Phœnician forms are commonly the older: and in general the Greek forms correspond best to them, but not always. The peculiar Semitic faucals, called in Hebrew Aleph, He, and Ayin, were not

The Greek vowel-symbols.

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[1] The *sounds* of course were not borrowed with the symbols: these were Indo-European, and had probably been represented before by different symbols. The new ones came into use doubtless in commercial intercourse.

wanted in the Greek, and the symbols were used for the vowels *a*, *ε*, *o*, as both their position in the alphabet and their shape prove: *ayin* indeed differs considerably from *o*, but the Phœnician character agrees with it[1]. The *iod*, which was not needed for the lost *y*, became *ἰωτα*: but there were sufficient traces in Greece of the *w*-sound to require the service of *vau*, i.e. F: there was therefore no symbol left to denote *u*: a new one was accordingly added at the end of the alphabet, which, as Prof. Key has pointed out, agrees well enough with the Hebrew form of *ayin*, as distinct from the Phœnician: but it cannot be traced.

The symbol H.

The symbol H (the Hebrew guttural *cheth*) was used at first by the Greeks to denote their own spirant *h*, the history of which was very different, until the use of a symbol was no longer felt to be necessary. It was probably called *Heta*, afterwards *Eta*. The history of *Omega* is uncertain: the two symbols *ω* and Ω seem rather distinct: the former is probably only *oo*, joined together, compare our *w* or "double u." The symbols although not introduced into Athens till 403 B.C. yet seem to have been employed earlier in the east of Greece, even where *ε* and *o* were regularly used for long or short *e* or *o*. This is at least not opposed to the theory that *η* and *ω* had rather a different quality from *ε* and *o*.

The symbols Φ *and* X,

The symbols Φ and X are found in the oldest inscriptions, and also *φς* for *πς* or *ψ*, and *χς* for *κς* or *ξ*. This seems to point to a time when there were no separate symbols for *k* and *kh*, *p* and *ph*. The conjecture may be allowed, that *φ* and *χ* belonged to the older Greek alphabet which the Phœnician superseded, perhaps with the values *p* and *k*.

and Θ.

Both the form and name of *θ* correspond to the Hebrew *Teth*, and its position in the alphabet is conclusive. It is not used for *τ*, as *φ* and *χ* are for *π* and *κ*. These three aspirates of the Greek were not taken by the Romans when they borrowed the Doric alphabet used at Cumae and the other Greek towns of

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[1] See Key, p. 30.

South-west Italy and Sicily. They did however borrow the symbol χ at some later date, as appears from its position at the end of the Roman alphabet, but before the period when ξ was adopted in Greece, for there is no evidence that *x* in Latin was ever either an aspirate or a breath. The change of the value of the symbol in Latin is strange, and cannot be explained with certainty: Prof. Key[1] conjectures plausibly that *xs*, which is found in the oldest Latin inscriptions[2] may have been a copy of the same combination which, as before observed, was found in Greece instead of κσ: then, since χ (the guttural aspirate) was never found in Latin except in this particular combination, it naturally suggested the following ς; which thus became superfluous and was dropped. The later Greek symbol Ξ does not agree with the Hebrew Samech (in the place of which it stands) either in form or in power: I would again hazard the conjecture that it may be a relic of an older alphabet, put into the place of that first of the three sibilants, which were not all required by the Greeks.

The sibilants.

The Dorians had two symbols for *s*, Σ and M, which in form come nearest to the Phœnician equivalents of the Hebrew Tsadi and Shin. The Umbrian also and Etrurian have two symbols: the Oscan and Latin dropped the second. The M, like Shin, was perhaps equivalent to *sh*, a sound not required by the Greeks (at least originally), nor by the Latins. The form and place of *San* correspond to *shin*, the name looks more like Zain, as Dr. Donaldson holds[3]. The history indeed both of the forms and names of the sibilants is obscure. *Sigma* was originally *si*: *san* is preserved in σαμφόρας, and in the name *Sampi* of the symbol ϡ, which was also an easier way of writing *sp*, just as ψ (which survived) was a simpler form of *ps*.

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[1] Ibid. p. 108.

[2] E. g. *Maxsumus*.

[3] See his account in the *New Cratylus*, p. 176, which differs to some extent from that here given.

Zeta.

Z corresponds in place and moderately in form to Zain (sounded *dz*). The sound may have varied in Greek, where it always represents some phonetic corruption, as will appear in its place. It occurs (as weak *s*) in Oscan and perhaps in old Latin: this will be discussed below.

Koppa.

Koppa was retained by the Dorians, and universally in the table of numerals for 90. It passed with the rest of the Doric alphabet into Latin, as Q.

The Latin F and H.

The Latin F and H stand for lost aspirates: the F representing in form the F (i.e. *w*), for which the Latins regarded V as a sufficient representative: and the H in its old force.

Latin borrowed symbols.

The symbols Y and Z in classical Latin were borrowed from the Greek, to express those Greek sounds which had no exact representatives in Latin. This new Z differed from the old *z* mentioned above, i.e. from the French *z*: being the Greek ζ, whatever that was, *dz* or the French or English *j*.

I shall take the four heads of vowel-change in a slightly different order from that given in my sketch above, as follows: Substitution, Assimilation, Dissimilation, Loss. This will be found most convenient for the Latin.

I. SUBSTITUTION.

1. *Splitting of the A-sound.*

1. A = a, e, o.

I shall commence with the most universal and most important change, that of Indo-European A into *ă*, *ĕ*, *ŏ* in Graeco-Italian, and *ā* into *ā*, *ē*, *ō*. I will give such evidence as can be given for the sound of these letters at the end of the section. There seems no reason to believe that this change was anything but phonetic. Short *e* and *o* are not raised powers of any of the simple vowels; and *a*, with which they are certainly connected, is heavier than *either* of them, the order in respect of weight being *a*, *o*, *e*; which is preserved in the conservative Latin. In Greek indeed, as I have mentioned above, the three vowels seem to be used in the *a*-scale, *a* being the radical; and *ϵ* and *o* the first and second steps respectively. That *o* is heavier than *e* is best seen by comparing the same formations in Sanskrit and in Greek; thus *jajāna* = *γέγονα*, where the short *a* of the Sanskrit is equivalent to *ϵ*, and long *a* to *o*; similarly *bhărāmi* = *φέρω*, but *bhāra* = *φόρος*.

It was to be expected *à priori* that the strongest and by far the commonest vowel of the original speech would be more corrupted in use than any other. Instances of its variation are common enough within our own island. The full sound of the *a* is more commonly retained in Scotland, whilst in England it has been thinned down to the *e*-sound, though spelt generally as *a*, and sometimes changed to *o*; in which case the Scotch frequently shews the *e*-sound, spelt as *ae* or *ai*. Thus the original *na* is still found in Scotland, but it is more commonly *nae* (*e*-sound); whilst as in England we have the same sound, *nay*, beside *no*. Scotch *awā* is English *away*. *Twā* is *two*, *snaw* is *snow*; but *baith* (*e*-sound again) is *both*, *laith* is *loth*, *gae* is *go*. In none of these changes is there anything dynamic: they are purely phonetic variations.

Found throughout Europe.

These instances would shew that this variation was not confined to the Graeco-Italian. It extended over all the European peoples; no doubt very gradually. I have already said it is not found in Sanskrit, which has no *ĕ* or *ŏ*, and its *ē*, *ō* are equivalents of *ai*, *au*. It has therefore been inferred that the tendency was not felt till after the separation of the East from the West[1]. This seems at variance with the theory, that the North European families parted off from the Eastern, before the nations of Southern Europe had left them; since this change is certainly found in members of the Teutonic and Sclavonic groups. How is this difficulty to be solved? Was there some connection again formed between the Germans and the Greeks after their first parting? Nothing would seem more improbable. Was this vowel-change the result of independent phonetic action in the separated peoples? This again is hard to believe, when we see the simple words and roots which exhibit the same variation: but it is not impossible. The vowels ε and ο are produced by the first change in Greek and Latin, and afterward sink to ι and υ: but in North European nations it is generally *e* which is developed from *i*, and *o* from *u*. The *ŏ* of the Sclavonic must have been developed after the separation of that language from the Lithuanian. The Keltic agrees in the tendency of its vowel change mainly with the Teutonic: yet *a* in it could pass directly into *e* and *o*[1]. These facts shew that different languages could arrive at the same sounds in different ways. Still I think it not impossible that a tendency to the change we are discussing may have existed even before the first separation. We can well imagine that there may even then have been dialectical differences, distinguishing to some extent the fathers of the future nations. The causes producing these differences need not have acted uniformly: while the ancestors of the Hindus and Greeks agreed in most points, the ancestors of the Greeks and the Germans may have agreed in one. This partial action would be quite in accordance with what I have said above about the formation of dialects within the Greek.

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[1] By Curtius, *Gr. Et.* p. 88.

History of the change from A to e.

The weakening from *a* to *e* clearly was the first in time. It has spread more widely than that from *a* to *o* over the Western languages, and is also more prevalent in particular languages. Thus (to borrow one or two examples from Curtius) we find that from Indo-European *dakan*, "ten," have come Greek *δέκα*, Latin *decem*, O. H. G. *zehan*, Gothic *taihun* (modified from *tihun* by the phonetic law of the language by which *i* and *u* become *ai* and *au* before *r* and *h*), Sclavonic *desęti:* also from *sad*, "to sit,"

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[1] Ebel, *Celt. Stud.* p. 121.

Greek ἕδος, Latin *sedes,* Gothic *sita,* Lithuanian *sedmi.* It will be observed that the Sclavo-Lithuanian agrees with the Greek and Latin: in the Teutonic family while the Old High German has *e* the Gothic has *i.* This *i* is sometimes said to be weakened from *e,* as also *u* from *o*[1]; but it is strange that the middle step should have passed away without a trace of it being left, for there is no *ĕ* or *ŏ* in Gothic. It is possible that this tendency was not fully developed within the Teutonic race till Goths were distinct from Germans, after which time each people carried out the change in its own way. At all events the use of *i* and *u* in Gothic is very parallel to that of ε and ο in Greek[2].

The tendency then to let *a* sink into *e* was clearly strong among the Western peoples before their separation. Traces of the change from *a* to *o* are much harder to find. Thus[3] βους and *bos* are the O. H. G. *chuo,* Slavonic *govędo.* But whilst *aktan* is *octo* in Graeco-Italian, no vowel-change is to be seen in the Gothic *ahtau,* or Lithuanian *asztũni;* *ovis,* "a sheep," is *avis* in Gothic and Lithuanian as much as in Sanskrit: the Sanskrit *am̃sa* is ὦμος and *umerus* (where the *u* is derived from *o*), but remains *amsa* in Gothic: similarly we find ὠλένη and *ulna,* but Gothic *aleina,* German *elle.* This tendency had scarcely begun to act at the time of the separation of the Northern and Southern peoples: it was then checked in the North, while circumstances, which we cannot now certainly ascertain, favoured its development among the Graeco-Italian people. It was more developed within the Northern races by the Sclavo-Lithuanian than by the Teutonic. Thus *osĭ* is Sclavonic for an "axle," which has *a* in all the other languages: *aga*, a goat (*αἶξ*, &c.) is *ožys* in Lithuanian: *agni*, fire, is Sclavonic *ogni*. We may now trace the progress of both changes among that people a little closer.

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[1] As by Curtius, *Gr. Et.* p. 88.

[2] Thus in Greek we had beside radical *τραφ,* the stems *τρεφ* and *τροφ.* Similarly in Gothic, the Indo-Eur. BANDH, "to bind," becomes √*band,* whence *bandi,* "a band" or "bond," and *bandja,* "a prisoner:" the present of the verb is *binda* (analogous to *τρέφω*): and though *band,* "I bound," does not correspond to *τέτροφα,* but rather to *ἔτραφον,* yet *bundum,* "we bound," gives the required analogy—*i* : *u* :: *e* : *o.* This *band* (singular) stands to *bundum* (plural) as *οἶδα* to *ἴδμεν.*

[3] Curtius, *Gr. Et.* p. 88.

The change from *a* to *e* had passed widely over the language (as we should naturally have expected) before its division into Greek and Latin. It had seized on far the greater number of roots. AS had become *es*; AD, "to eat," was *ed*; BHAR was *bher*, &c. Even the suffixes had in numerous cases been affected by it. Thus *patar* had become *pater*, *-tara* was *-tero* (*δεξί-τερο-*, *dex-tero-*), *-mana* was *-meno-* as in *διδο-μενο-*, *vertu-m(e)no-*; though in this and similar words, *alumnus*, *columna*, the *e* fell out altogether after passing through intermediate *i*, which survives in *terminus* and *femina*.

Still there are many words which either had not been attacked before the separation, or in which the "feeling" of one or other of the languages (one would like to naturalise, for it is impossible to translate, the admirable German "Sprachgefühl") preserved the older *a*. Thus we see *magnus* still retaining the old vowel, while the Greek *μέγας* has yielded; compare also *anguis* with *ἔχις*, *manere* with *μένειν*: on the other hand, the Greek is more faithful in keeping *ἐ-λαχύς* by *leuis*, *ἀχήν* by *egenus*: *at* and *et* are both found by the side of Sanskrit *atha* and *ati*. It is interesting also to observe how the less cultivated dialects of the same language clung to the older form. Thus we find the Doric *τράφω* by the Attic *τρέφω*; *ἰαρός* by *ἱερός*, and many others. In all such cases the Attic may have the weaker form; but we may well say that its weakness is oftentimes its strength, when we remember how it can employ its old and new forms to express different orders of action.

Those roots which preserved the old *a* intact seem to have been most commonly those which contained a guttural. This we should expect, the position of the organs being similar in the formation of the two sounds. Thus AK, *the* widely-spread root denoting "sharpness," never sank to either *ek* or *ok* with the short vowel: ὠκύς and *ōci-or* probably came through *ā*. Compare the numerous derivatives ἄκων, ἀκωκή, ἄκρος; *acus*, *acuo*, *acies*, &c. Similarly AG, PAG, TAG retain the *a* in both languages, as it was in the original. Sometimes however *a* sinks to *e* even before the guttural: as in *equus*, (*akva*), and even to ι in ἵππος: AG becomes ἡγέομαι in Attic. Moreover we find *a* in many cases where this explanation is not applicable. Thus *ambhō* (ἄμφω, *ambo*), *ambhi* (ἀμφί, *amb-*), are examples of the retention of the original vowel in Graeco-Italian, while the influence of the labials *m* and *bh* has produced *ubhâu* (Sk.), *uba* (Zend), *oba* (Sclav.); *ambhi* has become *umbi* in Old Saxon, *umpi* in O. H. G. (modern German *um*).

The change from a to o less frequent before the Graeco-Italian period.

The transition from *a* to *o* is a much less accomplished fact. That it took place in Graeco-Italian times is shewn by the *o* occurring in both languages in many certainly old words: as ὄϝις = *ovis*: βοϝο- = *bovi-*; in both of these cases the *o* is already due to the following *v*. Further, ὀκτώ = *octō*, δόμος = *domus*; ὄζειν is answered by *odor*; ὄρνυμαι by *orior*; ὀστέον by *os*(*s*); ὄσσε (ὀκιε) by *oculus*; ὀπός by *opimus*. Still the list is not great, especially of roots: and there are many examples which shew how partially the tendency acted. Thus we have *da-re* by the side of δι-δό-ναι, *asinus* by ὄνος (for ὄς-νος), *lauere* by λούειν (=λοϝειν): whilst the Greek presents the original form in μαλακός (Latin *mollis*), in καρδία (Latin *cord-*), and others. We find the Greek dialects wavering: thus the Lesbian in general takes the ο: as in the Aeolic poem which comes at the end of the Theokritean idylls we have ὀμνάσθην for ἀναμνασθῆναι and ὄρπετον for ἄρπετον[1]; so Hesychius (ἄρπετον = ἰκτῖνος in Cretan): the word has nothing to do with ἑρπετόν, which gives no sort of sense: and in Sappho's first fragment ὀνία occurs for ἀνία (l. 3)[2]. We have βρόχος (2. 7), and ὄν = ἀνά is very frequent in

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[1] Theok. xxix. 26 and 13. See Ahrens, I. 77, note.

[2] For other examples, see Ahrens, I. 76.

Lesbian inscriptions. But in the numerals we find the Doric Ϝικατι corresponding to the Attic εἴκοσι: on the other hand, the vowel of τέσσαρες is older than that of the Doric τέτορες. And a similar wavering in the Attic is shewn by forms like λέαινα (for old *λεαν-yα*) by the side of λεοντ-; τεκταίνομαι (for *τεκταν-yο-μαι*) by τεκτον-, Sanskrit *takshan*. As a general rule, however, the Doric is distinguished from the Attic by the *a*- forms: thus we have ἅτερος, Ἰάρων, &c. on good inscriptions: γα for γε is universal both in Doric and Aeolic: we also find forms like τράχω and τράφω in Theokritus and Pindar; but these last may be due to the over-subtlety of grammarians. Traces of the same change within the Latin may be seen in *portio* compared with *pars; scob-s* (by *scabere*), and especially in proper names, as Valerius and Volesus, Fabius and Fovius. In these last it is impossible that the change should have been dynamic, they are probably dialectical varieties, like Claudius and Clodius, Labici and Lauici, &c.: but this may have been the case with *scobs*, &c.

Application of the newvowels.

O is most commonly employed by the Greek in suffixes. Thus the original *navas* becomes νέϜος, and the old Latin agrees in presenting *nouos*, weakened afterwards to *nouus*. So also *patar-as* (genitive of *patar*) becomes πατερ-ός; in Latin this termination has further passed into *i*: *pat(e)ris*. In both Greek and Latin the formative suffix *os* (originally *as*) for neuter nouns sank to *es* in the oblique cases: thus γένος, genitive γένε(σ)ος: *genus* (originally *genos*), *generis*, for *genesis*. The suffix *as* is however retained without weakening in many neuter nouns, as κέρας; while in neuter adjectives it is weakened to *es* in the nominative, as σαφές. The participle suffix *ont* (originally *ant*) has suffered the same weakening in Latin but not in Greek; compare Sk. *bharan-tam* with Gk. φέροντα, Lat *ferentem*. One relic of the Graeco-Italian form is to be seen in *euntem*, weakened from *eontem*. It will be observed that here the Greek has retained the *a* in the case-suffix; and the rule holds generally that where a final nasal has been lost, *a* is kept and not weakened to *o*: thus we find *δέκα* from *dakan* (*decem*), *ἑπτά* (*septem*), *ἔδειξα* from *a-dik-sam*(*i*), the Sanskrit *adiksham*; compare Latin *dicebam*. In the vocative, Greek and Latin agree in weakening the Graeco-Italian termination *o* to *e*, the most convenient of all vowels to end a word. Passing to roots we shall find that *o* appears but sparingly in Greek; ΟΔ and ΟΡ have been mentioned above: the two languages agree as to the vowel; in Latin √*vol* (*uolo*, *uolt*), weakened to *e* in *uelle*, &c., Greek √*βολ* in *βολ-yο-μαι*, Lesbian *βόλλομαι*[1], Attic *βούλομαι*: and *o* occurs very frequently in Latin roots, though mostly in connection with a *v*, as *uo-mo* (Ϝεμ-ε-ω), *uoc-o* (Gr. √Ϝεπ), *uol-uo* (Ϝελ), &c., or other labial sound, as *mor-ior*, *dom-o*, &c., from which it may be inferred that the Graeco-Italian vowel was commonly *e*, which in Latin was assimilated to the form *o*.

Especial gain of the Greek language hereby.

Something has been already said of the great gain which the Greeks derived from this splitting of the *a*-sound: many examples are given in Curtius' Essay, already referred to[2]. We have seen how they used the three vowels to distinguish the three stages of action, expressed by *τραφ*, *τρεφ*, *τροφ*: also to distinguish different cases which all originally had but one vowel, *a*, as *πόδας*, *πόδες*, *πόδος*[3]. The Latin here, as generally, gave up all its gain, in weakening all alike to *e*, though it then distinguished the genitive singular by further weakening to *pedis*. But perhaps it is in conjugation that we see best the strength and precision which the Greek has gained by the original weakening. It has been enabled thereby to employ the different vowels, for the root, the suffix, and the internal modification of the root. Thus, how much more varied in sound, how much more expressive of keen perception of logical distinction, is γέγονα than the Sanskrit *jajâna.* Here the *a* is left in both languages to form the suffix[1]; but in Greek the radical vowel is changed to *o* instead of being merely raised from short to long *a*: whilst the reduplicated syllable is marked by the distinctive ε.

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[1] Theok. XXVIII. 15.

[2] *Comp. Phil. and Class. Scholarship*, p. 33 et seqq.

[3] See p. 5.

Compare too the first person plural γεγόναμεν with the Sanskrit *jajnima.* Here the use of the vowels ε and *o* in the first syllables enables the Greek without sacrifice of euphony to keep the strong original *a* for the connecting vowel between the root and termination. The Sanskrit, on the contrary, allowed the *a* to sink into *i*: and the result was that the link was too weak to maintain the balance of the word, and it became corrupted, as *jajanima* to *jajnima,* or *tatanima* to *tênima.* Again, it is by this alternation of the *a* with the dull *o* that the Greeks are able to distinguish one tense from another, as ἐκτείναμεν (aor.) from ἐκτείνομεν (imp.); ἔχομεν (pres.) from ἐχέμεν, the halfway form between ἐχέμεναι and ἔχειν. Lastly, the Greek is a great gainer by the three verbal forms in *-αω, -εω,* and *-οω,* as compared with the single *-ayâmi* of the Sanskrit. No doubt in practice this distinction of forms was not so well used as it might have been, by being rigidly applied to express distinct ideas. Still, on the whole, the Greek verbs in *-οω* have an active sense, and verbs in *-εω* are neuter (contrast πολεμόω and πολεμέω), whilst those in *-αω,* being closely connected with nouns in η, suggest at once their meaning from their derivation[2]. In Latin the vowel-system became rigid at too early a period to allow of the developments we see in Greek: consequently we find in it forms which have lost their distinctive meaning: thus -(*a*)*o* of the first and *eo* of the second conjugation are generally used merely as conjugational forms with no distinct trace of their old signification.

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[1] The original suffix of course was μι; *a* was only the connecting vowel which facilitated the pronunciation of the two consonants. But, as we know, μι was lost; and thus from the grammatical point of view, *a* must be regarded as the existing suffix of the 1st person singular.

[2] *Comp. Phil. and Class. Schol.* p. 46.

There is one point which may be mentioned here, when we are estimating the gains of the Greek language. In *γέγονα* the *ε* of the reduplicated syllable properly represents the vowel of the root. But at the earliest period at which the language is known to us, the vowel had come into universal use in this particular tense, to the exclusion of the radical vowel: we find, for instance, *τέτυφα* not *τύτυφα,* as we ought, and as we find in Sanskrit *tu-tôp-a.* And in the same way *ι* has come into universal use for strengthening the present stem by reduplication, in the somewhat rare instances where that method is employed; *δίδωμι* stands in contrast to Sanskrit *dadâmi*[1]. In such cases Greek is less interesting than Sanskrit as a living organism; it is more beautiful as an almost perfect machine.

Traces of similar division of ā.

Side by side with the extension of *ă* to *ă, ĕ, ŏ,* stands that of *ā* to *ā, ē, ō.* Curtius goes so far as to say that for every Greek *ā, η, ω,* we may expect an original *ā*[2]. However this may be, and it seems somewhat difficult to prove, at least some examples may be given to shew that the idea of this variation was present to the consciousness of the Graeco-Italian language as something possible, on the analogy of the division of short *a,* but much less strongly felt, inasmuch as the cases in which it could occur were much fewer. Thus *ὠκύ* and *ōci-us* stand together over against Sanskrit *âçu* from AK: and √*gnō,* despite the reappearance of *ā* in *gnārus,* is certainly a Graeco-Italian form of the original GNĀ: *dōnum* with *δώ(τι)ς* may be another example: *uox* is perhaps an Italian variation of *vāk* (Sk. *vâch*): *pōtus,* Gk. *πῶμα,* must be compared with Sanskrit *pātra.* The entire vowel-range is found in the declension of the suffix -*tar*, as Sanskrit *datāram*, *δοτῆρα* and *datōrem;* within the Greek -*τηρ* and -*τωρ* are used with apparent indifference; *βραχυτητο-* is in Latin *brevitāti-*. It is also found in the derivatives of a few roots: thus from SKAP, to support, we have *scāpus*, a stalk, which is also used in many derived senses, *σκῆπτρον* (and the parallel forms *σκίπων* and *scipio*, which are weakenings through *e*) and *scōpus* or *scōpio*, perhaps *scōpae*. SVAD, the root of "sweetness," is short in *ἔαδον*, but *suāda* and *ἡδύς* give the first steps of the change, which is completed by old English "sote," i.e. sweet. So also in Greek and Italian we find *φăσις*, *fāri*, *φήμη*, *φωνή*: in Greek alone we have from *√βα*, the Greek equivalent of GA, to "come," *βăτός*, passable, *βηλός*, a threshold, and *βωμός*, a basement (commonly of an altar: compare *ara*, i.e. *ās-a*, the "seat" (root ĀS) or base of the *altare* or "high" thing raised upon it). Also, if Corssen be right[1], we have from MA, to measure, the short *a* in *mănus*, *μέτρον* and *mŏdus*, *ā* in *mā-nus* (good, opposite of *immanis*, compare our phrase "estimable"), *ē* in *mēta*, and *ō* in *mos:* if the connection had been a little more certain, I should have given this, as he does, as an example of vowel-intensification.

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[1] What is stated here of Greek, is true of Latin also to a considerable extent. Latin here occupies a sort of midway position between Sanskrit and Greek. Its system of reduplication will require fuller discussion afterwards.

[2] *Gr. Et.* p. 400.

A well-known instance of the change in Greek is the weakening of *a* as a nominal suffix to *η* in Ionic, and to a less extent in Attic. The real nature of this change is quite lost in most grammars, which give *a* as a Doric broadening of *η*. The Aeolic also retains *a*. At least one change of *ă* to *ĕ* is seen in *εἰ* for the older *αἰ* (if). The Doric *ā* however sinks to *η* as well as the Attic in several words for which no special reason can be given: e.g. in *κτῆμα*, *χρῆμα*, and all the derivatives of the roots *κτα*, *χρα*: so also the derivatives of *√βαλ* and *√καλ*, *βέβλημαι*, *κέκλημαι*, &c. In Doric we find original *ā* retained in a few words where the other Greeks had *ω*, e.g. in *πρᾶτος* = the Attic *πρῶτος*, *θεαρός* = *θεωρός*, &c. These seem not to be Aeolic[2].

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[1] I. 431.

[2] Ahrens, I. 94.

Probable sounds of these letters:

I will now consider the probable sounds of these letters. The question is one of great difficulty, the evidence being not only scanty, but to some degree conflicting: the results therefore are not given as certain: but in the present state of our knowledge I think them the most probable. The results of the next sections, on the Latin and Greek diphthongs, and on vowel change in general, will be assumed here to some extent.

of A,

First of all, there is not much trace of any variation of the *a*-sound in the classical times of either language. In Latin there is no indication of any change of sound. In Greek we have the fact, already referred to, that the order of vowel strength in the *a* scale was *α*, *ε*, *ο*, which points to a sound for *α* different from the primary *a*. But I have said that this may be due to the analogy of the other two scales. The short *a* however is a difficult sound to keep pure: as is shewn by its regular sinking in Sanskrit and English to the sound of, e.g. the final *a* in *altar:* it is not impossible that it may have sometimes had this sound in Greece, especially in unaccentuated syllables. Local variations are also probable. Mr Roby[1] thinks that in the severer Doric the *α* may have been nearer to *ο* than the Attic *α*, in consequence of the contraction (which is not however universal) of *αο* and *οα* into *α*; this certainly points to a broader sound of the *α*, nearer to (ŏ) or (aw). This, and not the retention of the *α* where the Ionic had *η*, may be the πλατειασμός of the Doric: which must then be extended to the Lesbian, but not to the Boeotian. The Boeotian *α* I should place nearer to the *e* sound, about our (ă), on the evidence of the substitution of *η* for *αι*; *η* certainly differed in Boeotia from the sound heard for it in the rest of Greece.

of E and O.

The sounds of *e* and *o* are more difficult. So far as I know, Mr Roby has been the first to hold that *η* and *ω* differed from *ε* and *ο* not merely in length or quantity[2],

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[1] *Grammar*, p. lxviii.

[2] *Ibid.* p. lxvii.

Probable difference in quality between ε and η, ο and ω.

but also in quality: that they were nearer to *a*. I think this very probable. There seems, in the first place, no reason why the Greeks should find new symbols necessary for the ē and ō, when they wanted none for ā, ī, or ū. Secondly, the name ἒ ψιλόν does not denote any variation in quantity between ε and η: neither does it mean ε without the aspirate, according to the old explanation. It came into use after αι had sunk to the same value as ε: the different symbols for the same sound were then called ἒ δίφθογγον or διὰ διφθόγγου, and ἒ ψιλόν, i.e. *e* denoted by a single sound: so also ὖ ψιλόν was thus distinguished from οι, or ὐ διὰ διφθόγγου, when that diphthong was sounded as υ. But neither do the old names for epsilon and omicron, εἶ[1] and οὖ, indicate difference of quantity; on the contrary, they do point to sounds of different qualities, to an *e*-sound and an *o*-sound which if pronounced long would tend to be terminated by the *i*-glide and *u*-glide respectively, that is, to our (ā) and (ō), close *e*, and close *o*[2]. Then η and ω should be sounds which have no such diphthongal termination. But on which side of close *e* and close *o* did they lie? Were they nearer to *a*, or nearer to *i* and *u* respectively? Mr Roby, as I have said, puts them nearer to *a*: and I hold the same opinion, though doubtfully for η. In the case of ω there is less reason for doubt: it might indeed be the Italian close *ó* (as in *croce*), which, I think, is the only known sound between (ō) and (ū) in "pole" and "pull;" but I know no tendency shewn by ω, either in ancient or modern Greek, to pass into υ[3]: on the other hand, the change from ο to υ was frequent in Lesbian: and in modern Greek (*valeat quantum*) both ο and ω are nearly (aw)[4]. I should place ω between open *ò* and (aw). It may have differed in different dialects. In severe Doric it was the result of *oo*, sometimes of *ao* and οα, in Attic of αο and οα always: Mr Roby thinks that this shews that ο was nearer α in Doric than in Attic and, I suppose from his table[1], thinks that ω was the same in both dialects. I agree in thinking that there was probably not the same difference between ω and ο in Doric as in Attic, but whether the two sounds were alike (aw) or (ō) I think we have no means of determining. The Lesbian ο probably agreed with the Attic: that is, it was nearer to the *u*-sound in each dialect than ω.

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[1] This occurs in Plato, *Cratylus*, 418 c.

[2] See page 86.

[3] The Lesbian χελύνη for χελώνη may be an exception.

[4] Geldart, p. 19.

I have said that I feel more doubtful about η than ω. In one respect there is less reason. I know no recognised middle sound between (ā) and (ī). Therefore if η was nearer to *i* than (ā), instead of being nearer to α, it must almost certainly have been (ī) itself. But the universal contraction of εα into η[2], the contraction of αε into η in Doric and Aeolic, and into α in Attic, and the entire ignoring in every dialect of an ι after α at the end of a word, when coalescing with ε at the beginning of the next, are all arguments for putting η between α and ε, not on the side of ι. On the other hand, there are some arguments for an *i*-sound. It is certain that η = *i* in modern Greek. To this I should not attribute much weight if there were not some traces of a similar tendency in old Greek. The Boeotian tendency to ι will be mentioned in its place: this however does not go far enough: ι takes the sound of ει, and ει of η. Some examples given to prove identity of sound between ι and η are errors: thus γύγας is certainly not equivalent in form to γηγενής: and πίδαξ need not be derived from πηδάω: it is rather from a secondary √πιδ of √πι: but in some words the connection is undeniable, as ἐπίβολος and ἐπήβολος: and the forms in Aristophanes[3], βοΐ and βοηθεῖν, υἵ and ὑηνία, certainly imply some similarity of sound. The well-known passage of Plato[1]—*οἱ μὲν ἀρχαιότατοι ἱμέραν τὴν ἡμέραν ἐκάλουν, οἱ δὲ ἑμέραν, οἱ δέ νῦν ἡμέραν*—probably means that Plato had heard some Greeks use the form *ἱμέρα*: any one who is conversant with Plato's references to *οἱ ἀρχαῖοι* will not attach any deeper meaning to the phrase than a polite refusal to investigate a question any further: here at least it is perfectly certain that the original vowel was *a* and not *i*: and *ε* was of course used in ordinary Greek before *η* was established: but it undoubtedly would appear to be the natural conclusion from this passage, that the first vowel of the word just before Plato's time wavered between *ε* and *ι*, and that *η* afterwards expressed the sound more exactly. On the other hand, we do not know what Greeks they were who said *ἱμέρα*: we have no other evidence of the sound having occurred anywhere. Mr Geldart rightly rejects any evidence drawn from Cratinus' sheep which said (in our texts) *βῆ, βῆ*: because in Cratinus' own spelling they must have said *βέ, βέ*. On the whole I do not think that any slight variations of the *η* to *ι* in classical times, are sufficient to overbalance the distinct connection of the sound with *a*. Semitic transcriptions of *η* by *i* need not prove anything more than the absence of the *η*-sound in those languages. Plutarch, transcribing Latin words, gives *κάρηρε, μαιώρης, ῥῆγας*, &c.: and therefore I should think that it was probably either è, or (ĕ) pronounced long. A further piece of evidence with respect to *ε* and *ο* is gathered by Mr Roby from transliteration: *ο* represents both *o* and *u* in Latin, *ε* represents both *e* and *i* in Latin: which would seem to place *ο* and *ε* in Attic nearer to *u* and *i* than *o* and *e* are in Latin.

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[1] *Grammar*, p. lxviii.

[2] At least where α is found, it is found in every dialect: and its occurrence does not weaken the argument.

[3] *Peace*, 925 and 928: quoted by Geldart (p. 16), who believes that η was = *i*.

Correspondence of Latin with modern Italian.

The sounds of *e* and *o* in Latin are deduced by Prof. Munro from the correspondence of modern Italian. In that language close *e* and *o* represent *ē* and *ō* in Latin (and also *ĭ* and *ŭ*, which is natural enough, see Table of Sounds in Chap. IV.): and open *e* and *o* represent *ĕ, ae,* and *ŏ*, *au*. Prof. Munro would give the open sound to the short vowels, and the close sound to the long vowels, distinguishing however between vowels naturally long and long by position. Mr Roby[1] makes some just deductions from the force of this rule: but, allowing for mistakes and variations, I think it on the whole the best we can get. The analogy of *ae* and *au* is curious, because *ae* was a single sound, and *au* was not. But they were each *open* sounds, though in a different way. The rule is in accordance with that mentioned[2] concerning English *i* and *u*: that the open sound is regularly short, and the close sound long. There is however a discrepancy between the theories here given of Greek and Latin pronunciation of *e* and *o*, which at first sight seems fatal to their truth: η corresponds nearly to *ĕ*: and ε to *ē*. But it must be remembered that we are speaking solely of the *quality* of the sounds, not of their quantity: and in each quality it is possible to have both long and short sounds. It ought however to be stated that when the sounds of one language had to be represented in the other, *ĕ* and *ŏ* were regularly represented by ε and ο, and *ē* and *ō* by η and ω; in Latin also the quantity of the Greek vowel was generally maintained: the more obvious difference of quantity in such cases must have caused the subtler difference of quality to be ignored. Words which are not borrowed, but which correspond in the two languages, agree in length in far the greatest number of cases, but not always: e.g. θήρ = *fĕra*, ἧπαρ = *iĕcur*[3]. I do not assign much weight to the statement of the grammarians (quoted by Roby) that "*ŏ primis labris* exprimitur, *ō* intra palatum sonat:" which, if received, would contradict the theory given above: because they were separated by too long a time to make the statement trustworthy; and it is unsatisfactory in itself: the share of the palate in producing the more open sound of *o* is much less perceptible, and hence this *o* might not unnaturally be thought to be sounded by the lips alone: in reality both organs must be employed in each sound. Mr Roby does not appear to draw any distinction between open and close sounds of *e* and *o* in Latin. I think the evidence of Italian usage, though not convincing, yet sufficiently strong to justify me in arranging the Latin sounds accordingly.

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[1] *Crat.* 418 c, quoted above.

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[1] *Grammar*, p. lxv.

[2] At p. 89.

[3] Roby, p. 73.

Subjoined is a possible table of the single vowel-sounds of both languages. The idea is borrowed from Mr Roby[1]: whose table should be compared with this. I differ from him sometimes, but never without the feeling that he is more likely to be right than I am.

	I			E		A_e		A	A_o		O			U	
	(a)	(ĭ)		(ā)	è	(ĕ)	(ă)	(ah)	(ŏ)	(aw)	ò	(ō)	ó (It.)	(ŭ)	(oo)
Lat.	ī	ĭ?	ei	ē	ĕ	ae		a			ŏ	ō		ŭ?	ū
Attic	ι		ει	ε	η			α		ω		ο			ου υ
Dor. (sev.)	ι		ει		ε, η				α			ω, ο?			ου, υ
Lesb.	ι		ει	ε	η				α			ω	ο		υ
Boeot.	ι, ει		η	ε			α					ω, ο?			ου

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[1] See p. lxviii.

2. *Greek Diphthongs.*

2. *AI* = *αι*, *ει*, *οι*; *AU* = *αυ*, *ευ*, *ου*.

The substitution of *a*, *e*, *o* for original *a* led of course to a corresponding increase in the number of diphthongs, in Latin originally as well as in Greek: but the Latin had suffered almost the whole of them to fall into disuse before the classical period of its literature. In Greece the number of the symbols for the diphthongs was still further increased in classical times by the introduction of *η* and *ω*. Thus the language possessed in the room of the original *ai*, *au*, *āi*, *āu* no less than ten symbols, *αι*, *ει*, *οι*, *αυ*, *ευ*, *ου*, *ηι*, *ωι*, *ηυ*, *ωυ*, besides the rather rare *υι*. The diphthong *iu* is only found in the Teutonic family.

Diphthongs were originally "double sounds."

There seems no reason to doubt that these were all at first what their name implies, double sounds; in which the transition from the first to the second sound was distinctly audible. It is probable from the nature of the case that two sounds should be sounded as two, and probable also from their origin. When it was not a dynamic modification of a simple vowel intensifying the idea which that vowel conveyed, a diphthong arose, either from the coalition of two distinct vowels by the loss of an intermediate consonant, e.g. λέγε(μ)εν: or secondly, from a spirant being resolved into a vowel in accordance with laws of consonantal substitution to be mentioned in their place, e.g. *ἀνδρεῖος* from *ανδρε-yο-ς*, *λόγοιο* from *λογο-ςyο* (where the *σ* has left no trace of itself): or thirdly, from the prolongation of the original vowel-sound to compensate for the loss of a following consonant; thus when *ν* was lost in *μονσα* the first form must have been *μοοσα*, as is shewn by the Doric *μῶσα*, while the new vowel was weakened to *υ* in Attic *μοῦσα*, to *ι* in Aeolic *μοῖσα*. These new diphthongs often remained double sounds in Lesbian later than any other form of Greek speech: thus we find *ζοΐα*, Αχιλλέϊος[1], &c. where the *ι* is a resolved *y*: this liking for open vowels sometimes extended even to diphthongs which were the result of vowel-intensification, as *ὄϊδα*, *κόϊλος* (i.e. *κοϝ-ιλο-ς* from *κυ*). In Homer also we find *πάϊς*, *ὄϊς*, which afterwards became monosyllables: and large masses of open vowels caused by inflexion, which were afterwards contracted. These examples shew the direction which the language followed from double to single sounds. But in whatever way these vowels were brought together, it is clear that they would not at once coalesce into one sound; **λέγεμεν**, for example, would for some time assert its right to an unimpaired number of syllables: but the crasis would begin in the case of identical vowels meeting: similar vowels would then be modified, and, lastly, by analogy even dissimilar ones. "Similar vowels" are *a*, *e*, *o*, as sprung from the same origin, and so passing more easily into each other; each of them is "dissimilar" to *i* and *u*.

History of the change of dissimilar diphthongs in Greek.

It is difficult, perhaps impossible, to trace the history of the Greek diphthongs, and fix the time when they ceased to be double sounds—each sound presumably the same as when it occurred separately; neither can we do more than guess with more or less of probability at the new single sound of each. There can be little doubt that the corruption of the diphthong must have been little later in time than the causes which produced it. Two vowels following immediately upon each other are commonly troublesome to pronounce; the most simple (and probably the oldest) combinations of language shew us vowel and consonant occurring alternately[2]: when a consonant fell out and two vowels met, there must have been at once a tendency to subordinate one vowel to the other: so that one of the two should become a "glide," i.e. a sound too short to be called a perfect vowel, because it never receives any definite position, which yet is not a consonant because the voice channel is too open to allow of any friction in the mouth. Thus in our word "boy" we have a full vowel, the same as that heard in *on* (ŏ), followed by a sound which if it had sufficient duration would be *i* (ee); but it is not held any time: yet it is not the consonant *y*, for the tongue is not brought near enough to the palate; the difference between it and the consonant may readily be heard by any one who will first pronounce "boy" naturally, and then *bŏ* followed by the true *y*. The same combination is heard when a consonant follows, as in "boil." This second indefinite element is a glide: and in every diphthong one of the elements tends to become a glide as soon as the exact balance between the two concurrent vowels is overthrown. Next, this glide tends to fall out altogether: thus, instead of "boy" we sometimes hear only *bo*': this probably was the tendency in Greek. Sometimes however the two sounds can coalesce into a third one, as *οι* into *υ*.

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[1] Theok. XXIX. 5 and 34. See Ahrens, I. 105.

[2] See Leo Meyer, *Vergl. Gram.* I. 285, where numerous examples of Greek and Latin diphthongs are given, from which I have borrowed *largely in this section.*

Obviously that one of the two elements would most naturally become a glide, which was most akin to some consonant. Now, as we have already seen, *a* has no affinity to any consonant; but *i* and *u* are pronounced with the organs nearly in the positions for *y* and *w* respectively. Consequently we should expect them to be the sufferers in the struggle between the two members of the compound for independent existence; we should expect them to become subsidiary sounds, only exerting some influence in modifying the purer vowel; or to be lost altogether. Now in all the diphthongs we are considering, *i* and *u* are the final elements. When the first element is the unmodified *a*, then we shall expect that it will hold its own. But when *o* and *e* have taken the place of *a*, the conditions are not so simple. The first indeed is pronounced with the tongue far back in the mouth, most near the guttural (or rather back palatal) point of contact. Now the fricative which can be formed at this point is the harsher German *ch* (the sound of *nach* or *auch,* not that of *ich*) which is found neither in Greek nor in Latin. There was no consonant therefore to form the other limit for a glide corresponding to *o*, like *y* for *i* or *w* for *u*: accordingly *o* like *a* may be expected to hold its own. The case is different with *e*: it is a front vowel, though not so far forward as *i*. But the position of the tongue is almost as near that for *y* as the position for *i* is. Consequently when *e* and *i* meet we may expect a conflict of nearly equal powers.

In Greek the same word is found with different sounds as far back as the days of the Iliad and Odyssey. Thus Leo Meyer[1] quotes *κυνοραιστῶν*[2], but *θυμοραϊστῶν*[3]: and there is plenty of variety in the case-terminations, like *τείχεϊ, τείχει,* &c. If we pass from the earliest to the latest classical literature of Greece, we shall find in the Aeolic idylls of Theokritus[4] proof that at least in some words in certain parts of Greece the double sound could be retained even to the Alexandrian period: still we may probably safely say that at that time the single sound was almost universal. Our best evidence for the character and progress of the weakening is to be found in the change of the spelling in different dialects. Here the tendency is too marked to be doubtful: the second vowel of *dissimilar* diphthongs is commonly dropped in writing—in Doric, as *χάλκεος, εὔρεα*[5], &c.—and still more in Aeolic, especially in the Boeotian variety of the dialect, accompanied often by a weakening of the first vowel also: thus Ahrens quotes the forms *ἀρχῆος* (for *ἀρχαῖος*), Ἀχηός, *ἵππυς* for *ἵπποις, αὐτῦ* for *αὐτῷ*; even sometimes where the diphthong is dynamic, as Ϝυκία for Ϝοικία[6]. The Attic,

Tendency to drop the second vowel, the first being sometimes modified.

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[1] *Id.* p. 298. [2] *Od.* XVII. 300. [3] *Il.* XVI. 591.

[4] See examples on last page.

[5] Theok. II. 30, VII. 78. I am aware of course that Theokritus does not even in the strictly bucolic poems always use pure Doric forms: but I quote from him only when the principle in question could be proved from other less accessible authorities, such as the fragments of Epicharmus and Sophron, or the inscriptions in Boeckh's *Corpus*.

[6] *Gr. Dial.* I. 187.

on the contrary, keeps the full symbol: though in all likelihood it, like the rest of Greece, was losing the full sound, perhaps more slowly. Curtius suggests[1] that ει and οι must have been double sounds in B.C. 403, the year of the introduction of the symbols η and ω: otherwise what would have been gained by the distinction between ει and ηι, οι and ωι? This argument, however, loses its cogency, if η and ω represent different qualities, not merely different quantities of vowel sound. Some change of pronunciation from the old to the new school is shewn by the often-quoted lines of Aristophanes (*Clouds*, 849):

> ἰδού, κρέμαι', ὡς ἠλίθιον ἐφθέγξατο
> καὶ τοῖσι χείλεσιν διερρυηκόσιν.

Greek αι.

The second line gives no very clear indication of the pronunciation of the αι by the still old-fashioned Pheidippides: yet at least it shews that the new sound was thinner, perhaps like (ā) or German *ae*: which would correspond to the *ae* by which αι was transliterated in Latin; for *ae* had the *e*-sound, that is, either (ā) or the open Italian *e*, in the days of Lucretius[2], and probably much earlier. It may, I think, be considered at least probable, that αι when fully sounded was (ah) followed by a clear *i*: which probably, in Lesbian at least, passed into the *i*-glide, so that the sound would be that of our "aye," or "sigh" pronounced broadly: this seems likely from the curious Lesbian forms θυαίσκω, μαχαίτας from original α, which the Ionic weakened to η, combined with the fact that, in the same Lesbian, ι was often omitted altogether where it was written in the rest of Greece, e.g. in Ἄλκαος: and the same argument may be drawn from the Lesbian forms τάλαις for ταλανς (τάλας) and φαισί for φαντι (φασί), &c.: all these point to a full *a*-sound, followed by a glide, or by nothing at all. In the Attic Greek of the best period there is nothing to shew that the two sounds were not heard, or that the *a* had been modified: but it undoubtedly was by degrees reduced to one of the *e*-sounds: we see this in Boeotian where *και* is represented by *κή*, *Θηβαῖος* by *Θειβῆος*, in many inscriptions[1]; and the change was probably universal in the Alexandrian period: this is indicated by the rhyme of *ἔχει* to *ναίχι* in Callimachus' well-known epigram[2]:

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[1] *Erlaüterungen zu meiner Schulgrammatik*, p. 19. See also *Studien zur Griech. und Latin Grammatik*. Vol. I. part 2, p. 276.

[2] Corss. *Ausspr.* I. 695.

> *Λυσανίη, σὺ δὲ ναίχι καλὸς καλός· ἀλλὰ πρὶν εἰπεῖν*
> *τοῦτο σαφῶς, ἠχώ φησί τις 'ἄλλος ἔχει.'*

In reading the Greek of Sophocles and Plato we should probably do well to give both sounds as far as possible.

Greek ει.

The diphthong *ει* seems to have wavered in sound between *ε* and *ι*, neither sound being strong enough to absorb or exclude the other universally. The variations of the different dialects shew a preponderating tendency to the *e*-sound: in modern Greek it has become *ι*, as so many other sounds have. In strict Doric we find *η* where the rest of Greece has *ει* (*λέγην* not *λέγειν*): now this *η* is not likely to have differed in kind from the rest of Greece: if it was, as has been suggested, an *e*-sound nearer to *a*, it would seem probable that *ει* in these cases was a closer *e* with a glide. In most dialects we find some interchange between *ι* and *ει*: thus, in a Delphic inscription[3], we find *τειμά* and *Νεικοστράτα*: *Ποτίδαν* and *πόλι* (dative) are Doric[4]: *ἰρήν* (for *εἰρήν*) is Ionic; *ἴλη* is commoner than *εἴλη* in Attic: in Lesbian there is little confusion till late inscriptions[5]. But in Boeotian *ι* is found regularly where *ει* is found in the rest of Greece: we have *λέγις* and *ἶμι*; in Boeckh's list are *ἱράνα, κιμένας, Φιδίας* (for *Φειδίας*[6]), &c., and many others. Since, howevever, *ει* occurs in Boeotian with equal regularity where *η* is found in the rest of Greece (*μεγαλοσθένεις* and *θουγάτειρ* in the few remaining fragments of Corinna, *φίλειμι*, *Θειβήος* mentioned above, *ἀνέθεικαν* on inscriptions[1], *Ἰσμεινίατας*, &c.), we may conclude with fair certainty that *ει* was generally sounded nearer to *η* in the rest of Greece (despite the exceptions mentioned above), and had become *ι* in Boeotia. Considerable wavering is seen in the Latin transliteration. No doubt this test is not so sure in the case of the diphthongs as of the other sounds, because the Latins lost their diphthongs at so early a period: but the variation of spelling in Latin, where we have sometimes *e* and sometimes *i*, may be fairly taken to prove at least the various pronunciation in Greek: e.g. *gynaeceum* and *platea*, but *Iphigenia*. I conclude that the sound was sometimes that of our "grey," where the first vowel is predominant, and the second a glide—sometimes like "either" (old pronunciation): the varying sound of this word, and varying spelling *ee*, *ei* and *ie* in English[2], shew the flexibility of the combination: *ιε* becomes *ι* in Lesbian, as *ἶρον* in Theokritus[3], and in inscriptions. The sound of *οι* is probably given pretty correctly by our English "boy:" it then passed into a modified *u*-sound—the common Upsilon—as we have seen in the Boeotian, e.g. *τῦς* for *τοῖς*, *λευκοπέπλυς* is the dative plural in Corinna, and *ἐμύ* is *ἐμοί*: *υ* also stands for *ωι* as in *τῦ δάμυ* (frequent on inscriptions); these shew an early affinity for *υ*, into which, according to Curtius, it had passed universally in the fourth century of our era. It must have sounded as *υ* before the term *ὐ-ψιλόν* came into use: see p. 218. Then it passed at a much later period to *i*, which sound it has in modern Greek[4]. Those diphthongs which ended with *u* probably allowed the second sound to drop into a glide very soon.

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[1] So also in Corinna, *Frag.* 12:

> *μέμφομη δὲ κὴ λιγουρὰν Μουρτίδ' ἰώνγα*
> *ὅτι βανὰ φοῦσ' ἔβα Πινδάροιο ποτ' ἔριν.*

[2] xxviii. 56 (ed. Meineke).

[3] *C. I. G.* No. 1709. 6.

[4] Ahrens, ii. 184.

[5] *Ibid.* i. 97.

[6] Nos. 1563 and 1569.

Greek οι.

Greek αυ.

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[1] *E.g.* 1593.

[2] The history of these changes is elaborately traced by A. J. Ellis in his *Early English Pronunciation;* see especially pp. 92 and 104.

[3] XXVIII. 4.

[4] Curtius, *Erlaüt.* p. 24 (Engl. Trans.).

There is no variation in the use of *αυ*: and there is every reason to believe that it was sounded like the German *au*; i.e. a pure *a* followed by the *u*-glide: the sound of our "how" is not very far from it: according to Bell, the first is a low-, the second a middle-back-wide.

Greek ου.

Next *ου* had quite, or very nearly, the sound of Indo-European *u*, which had been weakened in Upsilon, as will appear in its place. This is shewn by the transliteration into and from Latin: Greek *ου* becomes *u*; Μοῦσα is *Musa*; on the other hand, Latin *u* regularly appears as *ου*, as Ρήγουλος, sometimes as *ευ*, Λεύκιος, very rarely as *ο* or *υ*. No doubt the Latins had no *ou* left by which to represent *ου*; but the sound had not so entirely vanished that it could not have been recalled and used for the purpose of greater accuracy, if it had seemed necessary. But the position of the tongue for *o* and for *u* is so close that there is a great tendency to slide from the first into the second: the great difference lies in the position of the lips, which are much more rounded for *u* than for *o*: accordingly, where *u* follows *o*, the passage of the compound into *u* is almost inevitable. The change was a convenient one for the Greeks, who (with the exception of the Boeotians) let their *u* sink into *υ*, to have this *ου* left to denote the original simple sound. Perhaps the Athenians retained something of the *o*-sound longer than the rest of the Greeks, for we find *οἱ μὲν ἔχοσι τάφο μέρος* in the inscription of the Athenians who fell at Potidaea, B.C. 432[1]. It is not likely that this *τάφο* is the Doric form of the genitive: rather this spelling shews simply that *o* was still predominant in the compound, the glide perhaps being dropped. The strict Doric rigorously suppressed the glide and wrote λόγω, not λόγου: but this *ω*, as has been pointed out, was probably akin to (aw).

Greek ευ.

The last diphthong *ευ* is most difficult of all. No help can be got from the Latin, which had lost both *eu* and *ou* at a very early date: however when a vowel followed, as in Euander, the *u* was probably sounded as a *w*. But the Greeks wrote *Lucius* as Λεύκιος, perhaps on the analogy of λευκός. This would seem to shew a preponderance of the *u*. The great variations of *eu* in modern languages shew the extreme instability of the compound: contrast the French *eu* with the German, which is a somewhat sharper sound than our *oi*. I can see no reason for its being so in Greek: still less that it was sounded as *ef*—as it is in modern Greek before any consonant but a soft mute. I know no important variations of its use in the dialects. It is best to sound it as near a diphthong as possible, retaining the original sound of the vowels: if pronounced quickly, the sound will be very like our *u* (i. e. *yoo*): this is at least better than the French or the German sound.

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[1] See Thiersch, *Gr. Gram.* pp. 40 and 77 (Engl. Trans.).

No doubt the second vowel of all these six diphthongs, where it preceded another vowel, passed not merely into a glide, but into its corresponding semi-vowel *y* or *w*—from which indeed it had often originally sprung. On no other hypothesis can we conceive the possibility of sounding combinations like *αἰεί* or *εὖοι*.

Diphthongs with first vowel long.

The diphthongs formed with *ᾱ*, *η* and *ω* need not detain us long. That *ᾱι*, *ηι*, *ωι* soon became monophthongs is evident from the nature of the sounds, for it is impossible to give the *ι* more than the slightest effect after the long preceding vowel, and from the fact that the *ι* was so early 'subscript,' the symbol, though not the sound, being retained doubtless to avoid confusion between cases and persons which would otherwise have been identical. The others *ηυ* and *ωυ* can scarcely have differed in sound from *ευ* and *ου*, and were as a matter of fact soon disused even by their inventors, though retained by grammarians for the sake of symmetry.

Greek υι.

Lastly, *υι* could allow either part to pass into the cognate semi-vowel, generally, no doubt, according as a vowel preceded or followed it. The latter is more common, and therefore e.g. *υἱός* would be sounded *huyos*: but it might

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also be sounded *hwios*, and probably was so, if the *o* were ever dropped, so that *υἱός* should become *υἷς*.

Similar diphthongs.

All the diphthongs which we have described so far, arose from the union of dissimilar vowels. What took place when similar vowels—*a*, *e*, *o*—met? Sometimes they became a diphthong, neither symbol being changed, but the two sounds tending more and more to coalesce into one (as in the cases above-mentioned), e.g. *θεός*, &c. But this was comparatively rare. As a rule the combination of sound was effected by the ordinary laws of phonetic change. The effort to produce two distinct vowels one after the other was too great, and therefore the difference was done away. The stronger vowel either sank into the weaker (Substitution) or assimilated it to itself (Assimilation). The two identical vowels remained for some time side by side: then they either coalesced into one long vowel, or by a further process of substitution, principally found in the Attic, the second vowel was again weakened, and so a new, and this time dissimilar, diphthong was produced. Of the diphthongs, however, so produced, *ου*, *ει*, *ευ*; the first, as we have seen, was decidedly monophthongal: the second inclines either to *ε* or to *ι*, that is, to a single sound: the last is uncertain. They are all compounds of sounds produced immediately together in the mouth, and so have a greater tendency to one single sound than the others. Generally, therefore, it appears that dissimilar diphthongs tend to remain double sounds, and similar diphthongs tend to become single sounds. The changes I am going to describe are quite familiar; they occur in every noun and verb. But since grammars do not generally give any principle for these variations, and merely call them "dialectical," I think it worth while to exhibit them in a connected form to make plain. The examples are taken chiefly from Leo Meyer and Ahrens, as before.

The six possible combinations of similar diphthongs are *a + e*, *a + o*, *e + a*, *e + o*, *o + a*, *o + e*. Those in which *a* is the final vowel rarely occur except in inflections. Now in all these cases we see in the different dialects sometimes substitution, sometimes assimilation, sometimes both. In order to treat them all together I shall be obliged therefore to bring in here my account of Greek vowel-assimilation, which I do with the less reluctance because it is only found in these combinations, and, as I have before said, is a very unimportant agent of phonetic change in Greek. The middle step is given as often as it occurs.

1. *a*+*ε*=*a*+*a*=*ᾱ*: as *αἰτιάεσθαι* = *αἰτιάασθαι*[1] = *αἰτιᾶσθαι*.
ε + *ε* = *η*: as *ἐνίκαε*. = *ἐνίκη*.

This last weakened form is universal in Doric[2]. Beside *αἰτιάασθαι* may be set the Epic *γοά-ασκον* for *γοαεσκον*. In the first change the stronger *a* has assimilated to itself the weaker *ε*; in the second the *ε* has been substituted for the original *a*[3]. The same processes will be seen in all the other combinations. As in the first case, in Doric *a* + *η* = *a* + *ᾱ* = *ᾱ*, as *ἀηδών* = *ἀδών*[4]. *αι* + *ε* (when in two words) become *ᾱ* in Attic, *η* in the other dialects: *κἀγών* but *κἠγών*. There are a few instances of *ᾱ* in Lesbian[5]. The unimportance of the *ι* beside the *a* is shewn by its absorption altogether here.

2. *a*+*o*=*a*+*a*=*ᾱ*: as ἄος (Attic ἕως) = ἆς (Dor. Aeol.).
ἐπάξασο = *ἐπάξα*[6],
’Α*λκμάων* = ’Α*λκμᾶν*,
Κ*ρονίδα*(*σy*)*ο* = Κ*ρονίδα*,
= *ο* + *ο* = *ω*: as *ὁράων* = *ὁρόων*[7] = *ὁρῶν*,
κέραος = *κέρως*,
= *ο* + *υ* = *ου*: as Κ*ρονίδα*(*σy*)*ο* = Κ*ρονίδου*.

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[1] *Il.* x. 120.

[2] Theok. vi. 45; cf. *ὅρη*, vii. 50, &c.

[3] This explanation is not inconsistent with the statement already made, that Doric *a*, *e* and *o* may probably have varied from the sounds which those symbols represented in Attic. Even though this be so, there is still work left for substitution and assimilation.

[4] Mosch. iii. 9.

[5] Alcaeus, *Frag.* 79.

[6] Theok. iv. 28.

[7] *Il.* i. 350.

Similarly by analogy,

α + ου = ο + ου = ο + ω = ω:
as *γοάουσα* = *γοόωσα*[1] = *γοῶσα*,
γελάουσα = *γελόωσα*[2] = *γελῶσα*,
(but *γελᾶσα* is also Doric, where the *α* has assimilated the *ου*. The *ω* in the participle of the contract verbs may also have arisen by compensation for the loss of the *y*: and so Curtius explains it[3].

From these two combinations it will be seen that breadth of sound is by no means necessarily the characteristic of the Doric as opposed to the Attic. In the second, indeed, the Doric and Aeolic *α* assimilate the *ο*, and thus we see, for example, the broad *Κρονίδα* and *ἆν*, instead of the Attic *Κρονίδου* and *ὦν* (from *ἄων*): but in the first combination it is the Doric which substitutes *η* for *α*, and so gets the thinner sound *ἐνίκη* instead of Attic *ἐνίκα*. No doubt as a general rule the Doric retained broad sounds, which were refined in the Attic so as to substitute elegance for strength; but this rule has many exceptions, which confirm the statement I have already made, that dialects are the result of *imperfectly* developed tendencies. There are however also sufficient examples of *α + ο = ω* in Doric: they are nearly always so formed to avoid confusion with other words. Thus we have the first persons singular, *τιμάω*, &c. = *τιμῶ*, &c.; and the *ω* is commonly found in monosyllabic roots, e.g. *λῶντι*, *ζῶντι*, &c.: in the subjunctive however we have *α*, e.g. *βᾶμες*[4]; *φᾶντι* and *ἰσᾶντι* occur upon inscriptions. *α + ω* in another word also give *ω*, as *τὤστια*[5]; also *αἰ + ω*, as *κὠχετο*[6]. In Attic *αι + ου* gives *ου*, as *κοὔ*.

3. *ε + α = α + α = α*, esp. after a vowel: *ὑγιέα* = *ὑγιᾶ*.
= ε + ε = η; *τείχεα* = *τείχη*,
ε-ακουσα = *ἤκουσα*.

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[1] *Il.* XXII. 363.
[2] Theok. I. 96.
[3] *Erlaüt.* p. 115.
[4] Theok. XV. 22.
[5] Theok. IV. 16.
[6] *Id.* IV. 30.

This combination is rare. In Latin, as Leo Meyer observes[1], it remains unaltered, as in *aurea, doceam,* &c.

4. ε + ο = ο + ο = ω : as ε-οφλον = ὦφλον,
φιλέω = φιλῶ,
= ο + υ = ου : as φιλέομεν = φιλοῦμεν,
γένεος = γένους,
= ε + υ = ευ : as ἀύτεον = ἀύτευν[2],
ὄρεος = ὄρευς.

The last change—to ευ—is very restricted in its area, apparently to the southern coasts of Asia Minor and the adjoining islands. It does not seem to be Aeolic: at least the examples in Alcaeus and Sappho are uncertain, and it is not found in inscriptions: it is certainly not Boeotian. τεοῦς, ἑοῦς, ἵππω occur in Corinna. Neither does it belong to the severe Doric; either ω (more rarely ου) is found or a variation peculiar to this form of Doric, by which ε passes into ι: e.g. in μογίομες, ἐμίο, ἐπαινίω. It seems to be Sicilian, but only in the pronouns: it is very common in Theokritus, who however may have got it from Cos. In Ionic (e.g. in Herodotus) it is very common: but it is not found in Attic. In the second change—as in the third of (2), and again in the second of (6)—we see that when ο + ο come together the second sound sinks to υ, especially in the Attic Greek. The second vowel has assimilated the first to itself, and then, unable to maintain itself beside its self-created rival, it passes into the weaker υ. The third modification, on the contrary, shews an immediate weakening of the second vowel, with no change of the first. Of course it must not be inferred that the other change to ου was unknown in other dialects than the Attic: it is not uncommon even in Doric: thus Καλλικράτους, ἐπιμελουμένης, &c. are Spartan[3].

5. ο + α = α + α = ᾱ : as ἁπλόα = ἁπλᾶ,
= ο + ο = ω : as ὄϝατα = ὦτα,
βοάσομαι = βώσομαι[4],

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[1] *Verg. Gram.* p. 294.

[2] *Il.* xii. 160.

[3] *C. I. G.* 1405, 1398.

[4] *Od.* i. 378, it is also Doric.

6. ο + ε = ο + ο = ω : as ὑπνόεν = ὑπνῶν[1],
= ο + υ = ου: as λόετρον = λοῦτρον.

The change of ο + ε to ω belongs to the severer Doric; the second is the regular weakening, and is found even in Doric as well as ω: but when ε begins a word it is common, as ὤλαφος[2]. When ο + α meet in two words, we have ἀνήρ in Attic, ὠνήρ in Doric and Ionic: ο + αι becomes ω, as ὤπολος.

Recurrence of the same vowel.

When the *same* vowel occurs twice, the natural result is clearly that the two should coalesce in one long single sound: as is the case in κέρατα, κέραα, κέρᾱ; γένεσε, γένεε, γένη; αἰδόος, αἰδώς. But just as when similar diphthongs had become identical by assimilation, the second vowel was weakened, especially in the Attic, so is it also here. Thus the combination ε + ε becomes in Doric and Aeolic η, and ο + ο becomes ω: λέγε(μ)εν is λέγην, ἵππο(*sy*)ο is ἵππω in both—at least in the severer form of the Doric; in the softer Doric ει and ου are universal: and there is some irregularity in the Lesbian also. In Attica the two vowels were perhaps in each case sounded as a diphthong, long enough to allow the second vowel to become weakened, to ι and υ respectively: λέγειν, ἵππου. So also when the second vowel-sound is the mere prolongation of the first caused by the loss of a dental, or the dental-spirant *s*. Thus ει is the result in Attic (sometimes in the other dialects) of ε + σ, e.g. εἰμί for εσ-μι (Lesbian ἔμμι, severe Doric ἠμί, softer Doric εἰμί[3]): of ε + ν, e.g. εἷς for ἑνς (severe Doric ἧς): of ε + ντ, as τυφθείς: of ε + νθ, as πείσομαι for πενθ-σομαι. Again, ο + δ = ου, as πούς: ο + ντ = ου in δούς. These changes might be explained on precisely the same principle as those above; that is, that ἐσμί became ἐεμι, and then εἰμί; the middle form could be supported by the Doric ἠμί and perhaps by the Aeolic forms to be mentioned below. But it is perhaps simpler, and more in accordance with the views already set forth, to explain this *ει* as the natural result of the voice dwelling upon *ε*[1]; namely, that when we sound (a), as has been already pointed out, an *i*-glide arises naturally after it: and similarly a *u*-glide after (o). These forms are Doric as well as Attic; the softer Doric however sometimes allows the second sound to drop altogether: as *ἐρίσδεν* for *ἐρίσδεμεν*, not *ἐρίσδην*; *ἀμπέλος* for *ἀμπέλους*[2], a form, by the way, which was retained by the Argives and Cretans; and many others. In all these the sense of the original length of the last syllable was kept up by not letting the accent be thrown back. The Lesbian sometimes employs a peculiar change of its own, by which *ι* appears instead of *υ*, as *ο + ντ = οἰ* in *φορέοισι*, &c.[3]. This and parallel forms, *πρέποισα*, *Μοῖσα*, &c., are very common in the fragments of Alcaeus and Sappho, and are also found in Pindar. It certainly cannot be assumed in these that the *ι* is weakened from the ordinary *υ*, if that *υ* be nothing but a glide: such glides are too short in their pronunciation to be capable of corruption. The *ι* therefore must be explained as a glide which sprang up immediately after the *ο* in Aeolic: and so it is parallel to the forms *θνάισκω*, *τάλαις*, &c., which have been explained above[4]. The Boeotian in general has *ω* in these cases, like the severe Doric; both when two vowels are contracted and when a consonant is lost. The tendency of this dialect to single vowel sounds is very remarkable: the only exception is the use of *ει* instead of the ordinary *η*; the tendency toward the particular vowel *ι* reminds us both of the Latin, and also of the extraordinary fondness for that sound shewn in modern Greek. In this love for the monophthong the hard Doric stands next to the Boeotian, and the soft Doric next. The Attic has much more of the diphthong, however the second element was sounded. The Lesbian seems to affect glides. Generally the tendency to become monophthongs was greatest in *ει* and *ου*, which is what we should expect on physiological grounds: next to these come *αι* and *αυ*.

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[1] *Ar. Lys.* 143.

[2] Theok. I. 135.

[3] Ahrens, II. 318.

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[1] This is Mr Roby's explanation, preface, p. lxvii.

[2] Theok. IV. 8, V. 109.

[3] Theok. XXVIII. 11.

[4] At page 227.

3. *Latin Diphthongs.*

3. *AI=ai, ei, oi; AU=au, eu, ou.*

These, as I have already said, were once as numerous as those of the old Greeks. But at a very early age they dwindled into simple sounds. Their history has been fully traced by Corssen: the account here given will be little more than an epitome of his results. I will take the six diphthongs, *ai*, *ei*, *oi*, *au*, *eu*, *ou* in order.

(i) *Latin ai.*

It would appear from inscriptions[1] that *ai* was sometimes retained, sometimes written as *ae*, from the third century B.C. to the latest times: but it was doubtless in every case pronounced as *ae*, whilst the older method of spelling was of use to distinguish the genitive singular[2] of the first declension, for example, from the nominative plural, which was written with *ae*. This rule however was probably never universal: we find *tabelai datai* (nom. pl.) in the *Epistola de Bacchanalibus*[3], B.C. 186, &c. Perhaps the old *ai* may have been retained longer in the root-part of the word than in suffixes or prepositions: thus we find *aides* and *aidilis* in the well-known epitaph on L. Scipio, son of Barbatus, whilst on the Columna Rostrata of Duilius[4] we find *prae-sens* and *praeda* (i.e. *prae-hid-a*—the same base as *pre-he*(*n*)*d-o*). In the letter however of the consuls forbidding the Bacchic rites (quoted above), we have *aedes*, and *aiquom*. Clearly no fixed rule for the spelling can be given. Corssen however observes that in legal notices from the time of Gracchus to Caesar *ae* is found universally instead of *ai*: after which time *ai* began to reappear: one result, we may suppose, of that restoration of archaic forms of which we have a specimen in Claudius' attempt to remodel the alphabet[1]. That the pronunciation of the diphthong was not unlike the German *ä* or (*a*) is shewn by the fact that it began by degrees to be written as *e*. It was so pronounced by countrymen[2] in the time of Lucilius, as we find from Varro[3] who quotes the forms *Cecilius* and *pretor:* while educated men preserved something of the double sound. In inscriptions after the Christian era *e* appears with increasing frequency: and an inscription dating 242 A. D.[4] presents the three words *Aimilius, Sabinae* and *Furie.* It is quite certain that at that time no distinction would be made between *ai* and *ae*: indeed the former had been replaced in the Latin alphabet only by an affectation of archaic forms; it appears at the same date, or even earlier, upon inscriptions instead of an *e*, which is etymologically correct; but it is possible that even then *ae* may have been rather nearer to *a* than *e* was. Mr Roby thinks that the sound may have been nearer to the (ă) in "hat," but pronounced long. It has been already mentioned that both *ae* and *ĕ* correspond to open *e* in modern Italian. This would agree with Mr Roby's view: but the closeness of the correspondence would point to a sound for *ae* even nearer to open *e*, that of (ĕ) pronounced long, as in Scotch "ell:" (ĕ) short is heard in English "ell."

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[1] *Ausspr.* I. 680, &c.

[2] The old termination of this case seems to have been *āyas*; whence *āis*. Then if the *s* were retained, the *a* absorbed the *i*, as in *familiās*. Corssen however gives examples of *āes*, all being female proper names (I. 184). See Schleicher, *Comp.* p. 558.

[3] *Mommsen, Corpus Inscriptionum*, Vol. I. No. 196.

[4] *Ib.* No. 195.

Not uncommonly *ai* was also weakened to *ī*. This takes place especially in case-endings, as *uiis* from *uia-is*, &c.; also in *prae* when in composition, as *priua-tus primus, pri-die, priuignus* (for *prai-ui-genus*), &c.; and generally in compound words, as *occido* from *caedo, iniquos* from *aequos, inquiro* from *quaero.* The middle form is sometimes retained, e.g. *exaestumo*[5], *pertaesus* regularly.

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[1] Tac. *Ann.* XI. 13.

[2] Corssen, *ib.* p. 689.

[3] *L. L.* VII. 96.

[4] *Id.* p. 691.

[5] Plaut. *Merc.* 566.

CH. VII.

(ii) Latin *ei.*

In like manner the diphthong *ei* would seem to have lost its double sound at the earliest times of which we have any knowledge. When it occurs in root-syllables, as in *deiu-o-s, leib-er, deic-o, ei-re,* &c. (all of which are found as common forms in the oldest inscriptions), it arises from vowel-intensification, and must be presumed to have been, when thus consciously employed, a true diphthong. But from the very earliest date we find in inscriptions a simple *i* instead of *ei.* Thus in the epitaph[1], quoted above, of L. Scipio, the "unus bonorum optumus," we find *filios,* not *feilios:* in the *Ep. de Bacchanalibus* (also referred to before) we find *scriptum* (though *screiptus* occurs in many later inscriptions) by the side of *deicerent* and *inceideretis; primos* on the Col. Rostrata[2], though *preimos* (from *praimos*) is much commoner[3]. On the other hand, we know from Varro and Quintilian that as early as the lifetime of the former the country people used *e* where we find *i* in classical Latin. Thus they said *uella* and *speca,* not *uilla* and *spica: leber* instead of *liber*[4]. There is every reason to suppose that this pronunciation is still older: *lēber* would not be taken from *lïber,* the form of spelling then becoming commonest, but from *leiber:* and if this *e* be as old as the *i* we find in inscriptions—for which supposition further reason will appear below—then undoubtedly at the time of the First Punic war *ei* can have been no longer a diphthong, but (as Corssen supposes) a middle-sound, between *e* and *i,* that sound of which Quintilian (speaking of his own time) says, "neque e plane neque i auditur[5]." It is not very easy, it must be confessed, to imagine what the mixed sound was, for which we have this testimony of Quintilian. It cannot have been (a) followed by the *i*-glide: for here the *e*-sound is certainly predominant. It would seem that it must have been nearer to the ideal diphthong, a combination in which the two sounds are in perfect balance: such an adjustment is more possible for *ei* than for any other diphthong: the powers of the two letters are more nearly equal than those of any other two.

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[1] Mommsen, *Inscr.* 32.

[2] *Ibid.* 196.

[3] Corssen, I. 780.

[4] Quint. I. 4. 17.

[5] Ib. I. 4. 8.

How old this wavering between *e* and *i* is in Latin may be seen from the inscriptions in places where there is no vowel-intensification, no *ei* to be taken as a common origin, in the verb- and case-endings. Thus, for example, in the epitaph of Scipio alone we find *fuet* and *dedet* by the side of *cepit: fuit* and *cepit* occur in the epitaph of his father Barbatus: *cepet* and others on the Columna Rostrata. Besides these, but only in later inscriptions, so far as I am aware, we find forms in *ei*, as *gesistei* in the epitaph[1] of Scipio the Flamen Dialis, and *venieit* in the lex Thoria[2]. Now this *ei* cannot denote anything but a wavering sound between *e* and *i*—the former the common sound in the mouths of common men—the latter becoming fixed by literary use: and the fact of this symbol being thus employed at a comparatively early period seems to me to shew that it must some time before have lost the double sound which it originally possessed, at least when it arose from vowel-intensification. The wavering between *e* and *i* is exactly analogous to the Greek variation, which we have seen above[3].

It is noticeable that *ei* is found as a middle step between *ai* and *i*, e.g. in the dat. plur. of the *a*-declension, *incoleis* for *incola-is; tabuleis* in the lex Agraria of Thorius mentioned above. It occurs also much more commonly as a weakening from *oi*: thus *ploirume* is found in the epitaph of L. Scipio—a weakened form of the nom. plur. *ploirumo-is,* still further weakened in the classical *pluri-*

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[1] Mommsen, No. 33.

[2] Ib. No. 200.

[3] EI is sometimes found in Plautine MSS. and is then retained by Ritschl, e.g. *Merc.* 409, *veis* (for *vis* from *volo*); *curabeis* (*id.* 526); *abei* (*id.* 748). These manuscripts however have suffered too much from copyists to be accepted of their own weight as trustworthy evidence of archaic forms; they may however confirm the sure indications given by inscriptions. (See Corssen, I. 207.)

m(*e*)*i*. The final *s* of the nom. plur. is found in *eeis* (*Ep. de Bacch.*), i.e. *eo-is*—in classical Latin *ii*: and how easily this *ei* passed into *e* is seen in the *ques* (=*qui*, nom. plur.) of the same inscription—which also contains *eiis* as a dat. plur.: and the Columna Rostrata has *castreis* for *castro-is*. Analogous to the plural *queis* and *ques* are the singular *quoi*, *quei* on the tomb of Barbatus[1], classical *qui*: I do not know that *que* occurs: but for *ho-i-c* we have the classical *hic* and the common *hec*, both found on the tomb of L. Scipio. Ritschl retains in Plautus the locative forms *herei* (*Mil. Glor.* 59) and *die septimei* (*Pers.* 260): but *die crastini* (after the MSS.) in *Most.* 881.

It seems probable then that *ei* was a middle sound between *e* and *i*: that in the oldest times of which we have any record it inclined rather towards *e*, and continued to do so always in the mouths of the common people: from whom it passed into the Romance dialects: whereas the literary dialect substituted *i* for it.

(iii) *Latin oi.*

The history of the diphthong *oi* in Latin is at first the same as that of *ai*. It early passed into *oe*, being pronounced so probably as early as the First Punic war, at which date we find *Poenicas* on the Columna Rostrata[2]. But the old spelling was retained generally. We have no other in the old epitaphs, e.g. that of L. Scipio, which begins—Honc *oi*no' pl*oi*rume, &c. *Oe* occurs regularly first in the lex Thoria (B.C. 111), e.g. *foedere* against *foideratei* of the *Ep. de Bacch.*, and it is regularly used in the laws given by Cicero, *De Legibus*, thus *oenus*, *ploera*, *coerator*, &c. (The case-endings also early suffered the same change, as evidenced by the well-known *pilumnoe poploe*

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[1] Mommsen, 30. It is wrongly written *qui* by Donaldson in the *Varronianus* (p. 261): where however a very useful collection of inscriptions and other records is given. A still better one is given by Roby, *Grammar*, Vol. I. App. B.

[2] The authority of this inscription is doubtful. It seems clear that it was not engraved as it now stands till the time of the empire; and it is questionable whether it was then faithfully copied from some older column (as Quintilian seems to have thought) or whether (as Mommsen thinks on internal grounds) it was the work of a "grammaticus aetatis Claudianae." See the *Corpus Inscriptionum*, p. 40.

(nom. plur.) of the Salian hymn). But a further alteration of this diphthong had begun as early as the lex Thoria, in which we find *unus, procurare,* &c.; *plures* and *curator* in the *De Legibus.* Shortly after the beginning of the first century B.C. this wavering ceased, and *u* appears as the regular representative of the diphthong. Corssen[1] gives the process thus—*oi, oe, ö, ü, u*: the stage *ü* he thinks proved by the transliteration of some Greek words into *oe*, as *Hoelas: ü* = Greek *υ*: the full *u* was established, he believes, in the Augustan age. But it is not at all easy to see why *ü* should have become *u.* A simpler passage may have been effected thus—*oi, ui, u*; the *i* acting on the *o* so far as to convert it into the *u*, which was nearer to itself. Or *oe* may conceivably have passed directly into *u*: it is the one intermediate sound between *o* and *e.* In Greek there is the analogy of the transition of *οι* into *υ* in Boeotian, but *u* and *υ* were different sounds.

OI is also weakened to *ī* and *ē* from very old times in case-endings, e.g. *Barbati* (gen. sing.) and *ploirume* (nom. plur.) on the epitaph of L. Scipio. In both these cases a middle step *ei* is probable[2]. The same change may have taken place in radical syllables, e.g. *uicus* (by the side of *οἶκος*) and *pomerium* for *pomoerium*[3]. But *uicus* (*ueicus*) at least may be a regular example of intensification—the first step in the *i*-scale, in which case there would be no Graeco-Italian *voikos*, but separate formations (of different steps) in the separate languages. This change to *i* in the terminations seems to shew an intentional dwelling on the last sound of the diphthong, for sake of emphasis.

Whilst *oi* and *oe* were sounded at all they were probably always diphthongs. This is shewn indirectly by the fact that they were not kept for the case-suffixes of the *o*-stem nouns, e.g. *filio-i*, as *ai* and *ae* were kept for the *a*-stem nouns, *aqua-i* or *aquae.* It is difficult to see in what way they should have passed into the full *u*, if they had been, as they are sometimes supposed to have been, the German *oe* or *ö*[1]. The nearest sound we have is perhaps that of "boy." But in all words there must have been a tendency to *ö*.

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[1] I. 201.

[2] See p. 240.

[3] Corssen, I. 707.

(iv) *Latin au.*

AU is the only diphthong which the Latin language has preserved, that is, in the generality of cases; for here also we find a weakening—to *o*—common in early times. It is observable however that the new form in *o* never drove out the old one in *au*, but the two remained side by side. Thus we find *aula* weakened to *olla*, *lautus* to *lotus*, *plaustrum* to *plostrum*; among proper names we find *Clodius* by *Claudius*, *Plotus* by *Plautus*. It does not however appear that the Romans availed themselves generally of these double forms (as the Greeks would have done in their place) to denote different modifications of the original idea. Differences indeed in proper names naturally lent themselves to distinguish different branches of the same family: in some few other words also a change of meaning is perceptible: thus *lotus* was restricted to the original idea "washed," while *lautus* expressed the result of the washing, with many minute shades of meaning. But *aula* and *olla* do not seem to have denoted different kinds of pots, or *plaustrum* and *plostrum* different shapes of carts: and the same is true in most other cases. We must then conclude that the different forms were used by different classes of people, and Corssen supposes[2] that *au* was employed by educated men in words where *o* was heard in the mouth of the countryman: the sound of *au* being the same as that of Greek *av*, which it regularly represents, and by which it is represented, that is, a pure *a*, followed by the *u*-glide. This is borne out by the anecdote of Suetonius about Vespasian, which Corssen quotes. The homely Emperor was taken to task by the courtier Florus, for calling a *plaustrum* a *plostrum:* and retaliated next day by pronouncing his critic's name as befitted ears so polite—*Flau-*

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[1] See Curt. *Erlaüt.* p. 26.

[2] I. 659.

rus. Naturally this distinction between the two sounds had this effect, that some words in which *o* was the original vowel—not merely a vulgar corruption—began to be spelt with *au* in the literary dialect. An example is *ausculari* (as in Plaut. *Merc.* 575, ed. Ritschl, and many other places). Here there can be no doubt that *osculari* is the true form: *ostium* and other words, derived from the same base *os*, are never spelt with *au.* But *ausculari* became the received form—perhaps on the false analogy of *auscultare*—to give a fashionable colour to so common a proceeding. Sometimes a false derivation may have helped to bring about the same result—or may itself have been only the result of the new spelling—as in *aurichalcum,* a word borrowed from the Greek *ὀρείχαλκος,* and originally written with an *o*[1].

The diphthong passes regularly in classical Latin into *o* in composition. Thus we have *suffoco* (base *fauc*), *explodo* (base *plaud*). Sometimes it passes into *u,* as *accuso* (base *causa*), *defrudo* (base *fraud*). Indeed even *frudavi* (compare *frus-tra*) occurs[2], and this form together with *cludo,* the proper name *Clusius,* and others, seems to shew that the change was not confined to compounds[3].

Somewhat analogous to the change of sound from *au* to *o* in Latin is the pronunciation of *au* in French—and in some parts of the North of England "law" is pronounced like *lo.* The common pronunciation of *au* in English is a weakening of another kind.

(v) *Latin eu.*

The diphthong *eu* occurs very rarely in Latin; it was regularly weakened to long *u.* The few examples—mostly proper names—where it occurs are in inscriptions, and have been mentioned[4] in the account of Vowel-Intensification. There are a few occasions in which *eu* occurs in compounds, as *neu* from *ne-ue, seu* from *se-ue, neuter* from *ne-uter,* and some others. The two vowels should probably be sounded as distinctly as possible; but when sounded quickly they must have had a tendency (like the Greek ευ) to pass into a sound like ours, that is, our *u*-sound = (yoo). *Neŭtiquam* is short in Terence; perhaps the *e* was elided. Similar variations occur in English; "duty" is commonly pronounced *dyooty,* but sometimes *dooty.*

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[1] *Ib.*

[2] Plaut. *Trin.* 413.

[3] Corssen, I. 661.

[4] See page 193.

(vi) *Latin ou.*

The last diphthong has passed through much the same history as *eu,* except that it lingered later in use. It is often found in the old inscriptions: *Loucana* is on the tomb of Barbatus, *plous* and *ioubeatis* in the letter concerning the Bacchanalia, *iouranto* in the Bantine table. *U* begins to appear in the inscriptions of the age of the Gracchi[1]. Thus in the lex Thoria *iubeo* and *ioubeo* occur indifferently; *iudex* and *ioudex; iuro* and *iouro.* Sometimes the *o* drove out the *u,* which in such cases had probably become a glide: but after this success it always sank into *u* at a very early period: thus *poplicus* occurs frequently in inscriptions, beginning with the *Ep. de Bacch.,* passing in the lex agraria Thoria into *publicus.* Similarly we find *nountios, nontiatus, nuntius:* and *noundinum* (contracted from *nouendinum*) in the *Ep. de Bacch., nondinum* in the Tab. Bant., and the common *nundinum*[2]. Sometimes the *o* weakened itself into *u*: so that the diphthong passed through the stages *ou, uu,* and then *u* as before. Thus *souos,* which occurs in the beautiful epitaph of Claudia, quoted by Mommsen[3], passed to *suuos,* and that to *suos* and *suus.* So also occur *flouios, fluuios,* and *flu-ere.*

Roby[4] assigns to *ou* the sound of "Southern English" ō, a diphthong formed of *o* and *u.* He probably means the ō with a *u*-glide. But in this case I should have expected the Latin diphthong to have passed into *o* rather than into *u*: but it does pass into *u* most regularly. I therefore think that its sound was probably very near *u*, like the Greek *ου*[1].

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[1] *Lucios* on the tombs of Barbatus and his son, which Corssen gives as examples of the weakening at a still earlier period, is more probably from Leucios.

[2] Corssen, I. 670.

[3] *Rom. Hist.* I. p. 60, Eng. trans.

Souom mareitom corde deilexit souo.

[4] *Grammar,* p. 81.

The following table gives the results of our discussion of the probable sound of the diphthongs: the new sounds being those to which the Greek and Latin languages were respectively tending. The English equivalents are given, as before, in brackets, as nearly as possible.

Orig.	Diphthongal sound	In Greek	In Latin
ai	as in "aye"	tending to (a)	tending to (a) or (ee)
ei	„ "grey"	„ (a) or (ee)	„ (a) or (ee)
oi	„ "boy"	„ ö, ü and (ee)	„ ö or (oo)
au	„ "how"	same	„ (o)
eu	„ "yew" (?)	same	„ (oo)
ou	„ "grow"	„ (oo)	„ (oo)

4. *Weakening of U in Greek.*

4. *U = u-psilon.*

The full *u* of the Graeco-Italian was retained by the Latin peoples, but weakened by the Greeks perhaps to the sound of the German *ü*. This is shewn, first by the fact that when the Greeks transliterated the Roman *u*, they employed not *υ* but *ου*, which, as we have already seen, approached very nearly, if not quite, to *u*: secondly, and more conclusively, by the variation of practice amongst the Romans in transliterating Greek words. In the early time of Roman intercourse with Greece, they were content to employ the best equivalents for Greek sounds which their language afforded; accordingly they employed *u* to denote *υ*, as in *Burrus*, i.e. *Pyrrhus*. But in the last century of the Republic, when the respect of the Romans for Greek literature had greatly increased, they were not content with this rough and inexact representation: and therefore they borrowed the symbol Υ as well as the sound. I do not know that any authority before Cicero mentions this borrowing: it dated from his lifetime. The sound of *υ* is not known with exactness; but it is certainly a modified *u*, and cannot have differed greatly from the German *ue* or *ü*, that is, as we have seen, a sound between *i* and *u*, having a front position of the tongue, like *i*, but rounded like *u*. Only one Greek people, the Boeotians, retained the full sound in its original place, i.e. in those words whose corresponding forms in other dialects are spelt with *υ*; but even they denote that sound by the symbol *ου*, like the other Greeks. Thus they wrote *γλουκου* for *γλυκύ*, but the quantities are not different; so that the sound of *ου*, in Boeotia at least, cannot then have been double. In inscriptions we find *ἀσουλία*, *τούχα* (i.e. *τύχη*), *σουν*, and *σουγγράφως*, *Διονούσιος*[1]; these are all Theban; *κάρουξ*, Κουζικηνός, *Μουρίνα* are on a list of victors at the *Χαριτείσια* from Orchomenos[2]; but in the next inscription of the same class and from the same place, we have the usual forms; Boeckh dates it *Ol.* 145. As a rule, the full peculiarities are found only in Theban inscriptions[3]. In fragments of Corinna we have *οὑμές* and *ούμίων* (i.e. *ὑμῶν*) *θουγάτειρ*, *οὑψιβίας*, *ὠνούμηνεν*, *τού* (which in common Boeotian is *τούν*) identical in sound as in meaning with Latin *tu*.

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[1] See p. 230.

According to Hesychius the full *u* was kept in Laconia also: he gives *κάρουα*, *οὐδραίνω*, and others. But there is no appearance of it upon inscriptions; neither is it found in the fragments of Alkman. Probably, therefore, Hesychius confused Boeotian with Laconian forms: the two dialects have much in common in detail, but not very much in principle.

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[1] *C. I. G.* 1562, 1563, 1569 a, 1573.

[2] *Ib.* 1583.

[3] In Oropian inscriptions the *υ* is found constantly, no doubt because of the close connection of the place with Attica: e.g. *ἀργυρος*, *συνήγορος* &c. in 1566 and 1569 c. The same explanation however will hardly apply to those of Lebadea where we have Π*υθόνικος* (1571), 'Ο*λύμπιος* *(1575), or to* those of Orchomenos (1579, 1580, &c.).

Parallel affections of u *in other languages.*

This weaker *u* differs from the full one, not in any alteration of the action of the lips, but from a different position of the tongue, which is allowed to come further forward in the mouth: the variation therefore is in the direction which all simply weakened articulation takes. The same vowel is much affected in many languages as well as in Greek: the French *u* is a parallel example; in *une,* according to Mr Bell, the vowel is a mid-front-wide-round: that is, the tongue is more nearly in the position for *e,* about half way between that for *u* (original) and that for *ü*: in *un* he thinks that the vowel is not rounded at all, i.e. there is no motion of the lips, but the point of the tongue acts as well as the back[1].

In England also *u* has lost its true character in the great majority of words in which it occurs, e.g. in *but, shut:* there is no rounding of the lips at all: the vowel differs from the French in the simpler position of the tongue: the back of it only is called into use, not the point. This weakening indeed is principally confined to the south; Cumberland is still pronounced by natives with the full vowel sound which we denote by *oo*: the tendency however (as is always the case) is progressive: it is not long since Russia and Prussia were called in England Roossia and Proossia: and already we sometimes hear *put* pronounced like *but.*

5. *Further (sporadic) Vowel-substitution in Greek.*

5. Sporadic change in Greek.

We have seen that in Greek the original *a* is regularly broken up into *α*, *ϵ*, and *ο*; and that *u* is weakened into *υ* or *ü*. The sound of the original *i* remained unaltered. Beyond this there was little variation in the main body of the Greek language. A vowel of one scale never *regularly* passed into one of another scale. This took place sometimes irregularly, and generally in one only of the head-dialects: most commonly in the Aeolic. But, if we except perhaps the Boeotian, this change never became so general as to deserve the name of a phonetic law, even for one dialect. For example, the weakening of *a* into *υ* is most commonly found in the Aeolic: thus in Lesbian *ἀπό* becomes *ἀπύ*: yet that same Lesbian retains the *a* in words where the other dialects have suffered it to sink as far at least as the intermediate *ο*; thus *ὑπά* is the Aeolic form of *ὑπό*[1]. The change therefore cannot be said to be peculiar to any one dialect: nor yet to any class of words: sometimes, but not generally, it is explicable as produced by the influence of adjoining sounds. It is essentially *sporadic*—and as such, to be carefully distinguished from those *regular* vowel-changes mentioned above, which have passed so generally over all the dialects, that they must be regarded as being among the characteristic marks which distinguish the Greek from its sister languages.

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[1] Technically, it is a "mid-mixed-primary" vowel, like that of *que* (Fr.). See pages 81—83.

I shall give the more important of the small list of words in which the Greek has suffered original *a* to pass into *ι* or *υ*[2].

(i) *Weakening of a to ι.*

(i) *A*=*ι*.

This will be found in most cases to have been helped by an intermediate *ϵ*, which is kept in some forms of the word. Thus in *ἐνίπτω* for *ἐν*-Ϝ*ίπ-τω* the *a* of the original VAK is weakened to *ι*. But the gap is bridged by the form (Ϝ)*έπ-ος*[3]. The same may be said of *ἴσθι* (√*ες*) beside *ἔστω*, *χθιζός* beside *χθές*, *ἰπνός* perhaps beside *ἕψω*: *σκίπων*, a staff, and probably *σκίμπους*, a couch, are from SKAP; and the Latin *Scipio* shews the same change: *σκήπτω* and *σκήπων* give the middle step. The analogous form *σκήπων* explains also why Scipio becomes *Σκηπίων* in Plutarch: that form cannot therefore be fairly used (as it has sometimes been) to prove that *η* in classical times had an *i*-sound. In other cases the Latin has preserved a Graeco-Italian *e* which has passed into *ι* in the Greek: as in *equos* by *ἵππος*, Sanskrit *açva*, where the original *a* is seen. In *πέντε* beside *quinque*, the Greek has the older form of the vowel, though not of the consonants. It will be observed in most of these cases that the weakened vowel precedes two consonants: as also in *κίρ-νη-μι* (√*κερ*), *πίτ-νω* which retains in the 2 aor. *ἔπεσον* the original vowel of √*πετ*, and many others. Here the word was sufficiently strengthened by the combination of consonants to allow a weakening of the radical vowel. A further reason is found in many other verbs, such as *πίπτω*, *γίγνομαι*, &c.; here the original forms were *πιπέτω* and *γιγένομαι*: the *ι*, which seems radical in the contracted forms, is really the vowel of a reduplicated syllable, the pronunciation of which was weakened as its origin became less distinctly felt. In *ἵζω* (beside *ἕδος*, root SED) we have either simple weakening or a contracted reduplicated form, *σι-σεδ-γω*: we may compare the Latin *sīdo* apparently for *si-sed-o*, and *nīdus* for *ni-sed-us*; at least the *ḍ* of the identical Sanskrit *nîḍa* is only explicable by supposing a lost *s*: I think therefore that *ἵζω* is probably a contracted form. But in *ἱδρύω* (beside *ἕδρα*) simple weakening is more probable. Sometimes the radical syllable itself has suffered, as in *ἀτ-ιτ-άλλω*, *ὀπ-ιπ-εύω*, and *ὀν-ίν-η-μι*. In verbs where the reduplication retained some of

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[1] Sappho, *Frag.* I. 9, &c.

[2] More examples (not very certain ones) may be found in Curtius (*Gr. Et.* 663—671, &c.), Leo Meyer (*Vergl. Gram.* I. 115, &c.), and in Ahren's two volumes (*passim*).

[3] This intermediate step is not however found in Sanskrit: where (in default of any *ĕ*) many common words have the original *a* weakened at once to *i*, as *pitar* (father); *duhitar* (*θυγατερ*): *niçâ*, if this, as well as *nakta*, =*noct-*, *νυκτ-*, Gothic *nahts*, A. S. *niht*, our "night." If so, the

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Sanskrit and the Greek shew different changes; the English old pronunciation, *neet*, still heard in the North, agrees with the Sanskrit. But Prof. Benfey connects *niçâ* with *ni-çi* (√*κι* in *κεῖμαι*) as "lying-down" time; which is very probable.

its significance the ι became at last the formal vowel of reduplication, as in τί-θη-μι, δί-δω-μι, &c. This origin of ι is probable, though not very recognisable, for ἵημι (i.e. *yι-ya-μι*); if so, it is a causal verb formed from YA, to go. On the same principle the difficult verb ἰαύω has been taken for a reduplicated form of VAS = to dwell; and, undoubtedly, resting in the same place is the primary idea of the verb, which came to mean "sleep" afterwards[1]; but I do not understand the form. Again, ἰάλλω may be ἰ-αλ-*yω*, perhaps from AR (Sanskrit √*ṛi* = to go): and ἰ-αχεῖν would come in the same way from ἀχεῖν (ἠχεῖν). All these however are very uncertain. Long *i* from ᾳ is seen in πίνω.

More examples of this weakening are to be found in the other dialects. The soft Doric of Sicily has ἱστία for ἑστία, where the Graeco-Italian *e* is warranted by the Latin *Vesta*: it also takes ι, rather ε, as a substitute for *y*, as ἀργύριος, φοινίκιος in Epicharmus, ὀστίον in Theokritus[2]. The Cretan θιός and Laconian σιός[3] for θεός are the only certain examples in hard Doric. The Lesbian division of the Aeolic shews little more the substitution of ι for ε instead of *y* mentioned in the soft Doric, as σιδάριος[4], πορφύριος[5], &c.: πίσυρες is certainly Ionic, but cannot be proved to be Lesbian. But in Boeotian the change to ι is very extensive: the set of the dialect is to this vowel, just as in modern Greek[6], in which η, υ, ει, οι and υι have all sunk to the ι-sound (ee). Thus we have θιός (probably not σίος, the form which occurs in Aristophanes[7]: the inscriptions all agree in having θ, and the word occurs very frequently: θ too is a letter for which the Boeotian has a decided preference; thus we find *ἔχωνθι* for *ἔχοντι*; and *τ* does not pass into *σ* before another *τ*, e.g. we have *ἴττω*[1] (√*Ϝιδ*), not *ἴστω*; there is therefore no tendency to assibilation): *ἰών* for *ἐγών*, *ἁμίων* (=*ἡμέων*) are very common: *ἀνέθιαν*[2] is *ἀνέθεσαν* (*ἀνέθηκαν*) apparently: *ι* takes the place of *ε* in contract verbs, as *ἀγωνοθετίω*[3], *πολεμαρχίω*, &c.; *ἴωνθι*[4] is for *ἔωντι* (*ἔωσι*, Attic *ὦσι*), &c. It is not indeed probable that the *ε*-sound was at any time absolutely lost in Boeotia: it is found even in Theban inscriptions, and still more in those of the other towns, which, as we have already seen, agreed with the speech of ordinary Greece in many points where Thebes differed. Still the tendency to *ι* was a very strong one.

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[1] ἰαύειν πόδα (*Phoen.* 1538) can clearly have nothing to do with sleep.

[2] 2, 21, 62, and 90; 4, 16.

[3] Ar. *Lys.* 81, 174: Thuc. 5. 77.

[4] Theok. 29, 24.

[5] Sappho, 13.

[6] See for the change in modern Greek, Geldart's *Modern Greek Language* in the Clarendon Press Series, which I have found very useful, though I cannot at all agree with the author in the importance which he assigns to modern Greek as a guide to the pronunciation of the old.

[7] *Ach.* 906.

(ii) *Weakening of α to υ.*

(ii) *Α*=υ.

As between *α* and *ι* an intermediate *ε* could generally be found, so here also *α* passes into *υ* commonly through *ο*. Thus *nakt-* (already mentioned) passed into Graeco-Italian *noct-* and here the Latin stopped: but the Greeks went on to *νυκτ-*. The same is true of *mola*, Greek *μύλη*: *σπυρίς* seems to be a weakening if compared with *sportula:* the original *α* is kept in *σπάρτον*, a rope. The Graeco-Italian *com* becomes *συν* or *ξυν*; the Sanskrit has *sam:* perhaps there was an original form *skam*. Sometimes however there is no sign of any intermediate *ο*. Thus we have *κύκλος*, which is apparently the same as Sanskrit *chakra:* and *ὄνυξ* is the Sanskrit *nakha*, our "nail," and occasionally we have both the *α* and *υ* within the Greek itself; as in *βυθός* beside *βάθος*, and *κυλίνδω* is more frequent than *καλινδέω*: *σκύφος* = a can, in the Odyssey[5], seems akin to *σκάφος*. The name Ἐ*φύρα*—which was once that of Corinth, but also of many other places—is clearly the "look-out place" from √*Ϝορ*: but the *υ* here may be partly due to the lost *v*. *Σίσυφος* and *ζέφυρος* seem to shew a similar change, but their derivation is not clear. It will be observed that in a great number of these words the change may be ascribed to a neighbouring liquid or nasal. These consonants modify vowels more than any others; they resemble vowels themselves, though in different ways: consequently when the organs are put into the position required for some one of them, there is a strong tendency to sound beside it that vowel which has the nearest position to it. We shall see much more of this influence exercised by consonants in Latin: it is regular there, but quite sporadic in Greek. We have already seen that in some roots *a* passes into *u* before *r* or *l*: e.g. SPAR becomes SPUR or SPUL. We find *υ* instead of *ο* in a small group of common names, which is rather curious, though in each case the change may be accounted for by the reason already given: there are *πρύτανις*, the Attic magistrate, which is doubtless derived from *πρό*: *αἰσυμνήτης*, the umpire—one who is "mindful of the fit" (*αἶσα* and √*μνα*), in later times an elective magistrate: and *πανήγυρις*, the solemn assembly: no one of these words seems to have been confined to any particular dialect: they are all doubtless instances of consonantal assimilation. So also *πύματος* is akin to Latin *pos*, *po(s)ne:* and *πρύμνη*, like *πρύτανις*, must be akin to *πρό*. Sometimes the change is seen in the suffix *-tar*, the Graeco-Italian *τορ*: as in *μάρτυρ*. Curtius compares the weakening in the corresponding Italian words, e.g. *dator*, *daturus*.

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[1] *Ach.* 860.

[2] *C. I. G.* 1588.

[3] So in 1583, but not regularly, see 1576 and others.

[4] *Ib.* 1569 a.

[5] xiv. 112.

But it is the Lesbian dialect which shews this change most fully. Just as the Boeotian inclined towards *ι*, so this dialect inclined to *υ*. In each the change, sporadic in the rest of Greece, was so extensive, as to almost deserve the title of regular. In Lesbian we find *στύμα*, *ὔμοιος*[1], *τυίδε*[2], (i.e. *τοιδε* = thither, Attic *τῇδε*), *ξύανον* for *ξόανον*, *ὔμαλος* for *ὁμαλός*, *ἀπύ* both alone, and in compounds as ἀπύγονος, (compare the Arcadian κατύ) &c.[1] The adverbs ἄμυδις and ἄλλυδις seem to be Ionic as well as Lesbian. ὄνυμα is vouched for by grammarians, but does not occur. But the compounds εὐώνυμος, νώνυμος, &c. are general. This change is the furthest limit of the tendency which we have already seen in the Lesbian to change *a* to *o*. It was however probably not so extensive as the change from *a* to *ι* in Boeotian.

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[1] Theok. XXIX. 25 and 20.

[2] Id. XXVIII. 5.

(iii) *Weakening of υ* to *ι*.

(iii) *U*=*ι*.

This, though not at all an unnatural change, is not common in Greek. From √φυ we have ὑπερφίαλος: compare ὑπερ-φυ-ής and the Latin *super-bus*, where the *b* corresponds regularly to φ as the representative of original *bh*: σίαλος seems to come from σῦ-ς. φῖτυς and φιτύω must certainly be referred to √φυ. In ψιθυρός from ψύθος we have apparently dissimilation, caused by the υ of the suffix: μῖσος and μύσος are probably not akin. The Grammarians give ἰπέρ, ἴπαρ, ἴψος, ἴψηλος as Aeolic: the last does occur in Sappho[2]: but there is no more evidence for any of them: and they do not occur even in Boeotian, which had much more tendency to the *i*-sound. The change can be regarded as only a distant indication of the passage into *ι* which became general at a much later period, according to Curtius not before the eleventh century[3]. The rarity of it deserves notice when we estimate the value of modern Greek pronunciation as a guide to the sounds of the older language.

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[1] Ahrens, I. 81, &c. [2] *Frag.* 119. [3] *Erlaüt.* p. 22.

6. *Further Vowel Substitution* (*Latin*).

Peculiar weakness of the Latin vowel-system.

This has found place in Latin to a much greater extent than in Greek. We have seen above how fully, even down to their most flourishing period of literature, the Greeks had preserved their original store of diphthongs, whilst the Romans at the age of Plautus had retained only one. We have also seen how vividly the distinction remained in the Greek mind of the three different vowel-scales, by the insignificant list of transitions from *a* to *i* or *u*, of which the more important have been given in the preceding section. The same precision must not be looked for in Latin. It has been seen indeed already that the distinction of scales was certainly received by the Italians from their forefathers of the Graeco-Italian age: for some of the traces of modification of the vowels, each in its own scale, have been given above. But that elaborate method could not be maintained in a language which suffered nearly all its diphthongs to degenerate into single sounds. Indeed the most striking characteristic of the Latin language is the exceeding weakness of its vowel system. The vowels have no longer any life in them. They are often the mere servants of the consonants to which they cling, and from which they take their tone: never (as in the Greek) do they expel the consonants by their own fuller life and energy[1].

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[1] In my first edition I quoted here Corssen's connection of the vowel-degradation with the gradual weakening of the Roman character. This connection was objected to by Prof. Mayor, I think with justice; and I have cancelled it. It is doubtless wrong to argue from a portion only of the phonetic system, whatever light the whole may throw upon the character of a nation. I am not quite sure that Prof. Mayor has escaped the same error; for he goes on to give his own interpretation of the fact. He considers the contempt of vowel sound to be a mark of the "strength and energy" of the Romans; I really do not see why; and of their "inartistic nature." Did they then restore their lost vowels as they grew more artistic? they went on corrupting them more

The steps of this vowel-degradation have been arranged by Corssen[1] in the following table, which is also given by Dr Donaldson[2]:

A passes to O .... U .... E .... I,
O passes to U .... E .... I,
U passes to E .... I,
E passes to I, U,
I passes to E.

From which table we see that while *a* retains its position as the primary vowel, never derived from any other, and while *o* is only derived from *a*, the other vowels *u*, *e*, and *i* are constantly substitutes of stronger sounds, not indeed indifferently, but in accordance with no law of vowel-scales. We shall see hereafter that the decision, which vowel shall be taken, rests generally with the following consonant. The vowel-change does not originate with the consonants: it is caused, as has been already insisted on, by weakness of articulation. But the direction which that change follows does generally rest with the consonants. This will be clearly seen in the section on Assimilation, where I shall describe that vowel-change which arises from weak articulation, but is modified by the affinities between particular vowels and consonants. At present I shall describe such change as is due to simple weakening, where the effect of neighbouring sounds is

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than ever. Prof. Mayor also cites "the elaborate vowel-system of the Indians as a mark of the indolent and unpractical life of the dreamy Oriental." But surely the Indian vowel-system is much *less* elaborate than the Greek, and even than the old Latin: they had no *ĕ* or *ŏ*, and by consequence form fewer diphthongs; their only gains were distinct symbols for the long original vowels, and also for the so-called vowel-sound of *r* (*i.e.* the glide), all of which sounds the Graeco-Italians doubtless had, though not the symbols. The Sanskrit *lṛi* existed in the brains of grammarians and perhaps in one verb.

[1] *Ausspr.* I. 299, ed. 1. A fuller table exhibiting the results of assimilation as well as substitution is now given by him in his second edition (II. 334) as follows:

a	to *o*	to *u*	to *e*	to *i*			
	o (orig. *a*)	,, *u*	,, *e*	,, *i*			
		u	,, *e*	,, *i*	to *o*		
			e (orig. *a*)	,, *i*	,, *o*	to *u*	
				i		,, *u*	to *e*.

[2] *Varr.* p. 318.

Contrast between the Greek and the Latin.

at least not distinctly traceable. As however I have contrasted the vowel-system of the Greek and Latin, I may in passing give a few instances where assimilation has been at work, in order more fully to shew the differing genius of the two languages. They are cases where the Latin has borrowed from the Greek, and has changed the word, after it had become naturalised, to suit its own phonetic laws. They are taken from different parts of Corssen's chapters on "Umlaut[1]." He has treated the subject so fully as to leave little else to be done but to select examples from his stores. From them will be seen how rigid and lifeless, how dependent on neighbouring sounds, is the vocalism of the Latin, as compared with the Greek. Take the five words, *Hecuba*[2], *crapula*, *catapulta*, *triobulus*, *epistula*. The penultimate vowel in each is *u*. But when written in the original language—Ἑκάβη and *κραιπάλη*, *καταπέλτης* and ὄβελος, *ἐπιστολή*—we see three vowels, *a*, *ε*, *o*. The reason is, as will be hereafter shewn in the chapter on Assimilation, that a labial and (more especially) *l* have a prevailing tendency in Latin to fix the preceding vowel (when weakened by some other cause) at *u*. Similarly *i* has an affinity to *n*, and *e* to *r*: *μηχανή* and *βαλανεῖον* become *machina* and *balineum*; *φάλαρα* and *τέσσαρα* become *phalerae* and *tessera*. Indeed, before the suffix *-ro-* hardly any other vowel but *e* is found, as in *libero*, *aspero*, &c. Contrast with this the varied abundance of the Greek *καθαρο-*, *φοβερο-*, *ἁλμυρο-*, *πονηρο-*, &c.[3] When, for ease of utterance, a vowel is inserted between two following consonants of a borrowed Greek word, the vowel is determined by the following consonant. Thus Ennius wrote Πατροκλῆς as *Patri-c-o-les*, because in the older language *o* shewed the same affinity to *l* as *u* does afterwards; compare the real Italian *Hercoles* or *Hercolus*: but Ἀσκλήπιος becomes

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[1] II. 60—333.

[2] There was an older mid-form *Hecoba*: Quint. I. 4. 16.

[3] Corssen, II. 199.

Aesculapius: δραχμή and Ἀλκμήνη become *drachuma* and *Alcumena* in Plautus, because of the labial nasal *m*. But μνᾶ and τέχνη become *mina* and *techina*[1], because of the following *n*.

I proceed to give examples of vowel-weakening, independent in the main of assimilating tendencies, under three principal heads—in formative elements (both formative and inflectional suffixes), in composition, and in reduplication.

(i) *Weakening of formative syllables.*

First then, in formative elements, we may see in the nom. sing. *o* the Graeco-Italian termination of the base (itself weakened from Indo-Eur. *a*) in classical Latin weakened to *u*. We have *filios Barbati*—with the *o*—on the epitaph of Scipio. This change was complete about the end of the Second Punic war: in the Edict of L. Aimilius (189, B.C.) the *u* instead of *o* is regular[2]. The *o* was retained always in *-ōs* (equivalent, as Corssen thinks, to *ās* with vowel intensified), e.*g*. *clamos, arbos, honos:* and the vowel sank no further even when the *s* became *r*. The neuter nom. ended in *os*, like the Greek *genos*, then *genus: opos* is found on a statue[3], the *o* is still seen in the gen. of many nouns, as *corporis* (for *corpos-is*): though others have weakened it to *e*, as *generis* for *genos-is*. This *os* can also be traced in the case-endings. Thus in the *Ep. de Bacch.* we find *senatu-os* (weakened through *senatuis* to classical *senatus*), and *corpor-us*, which speaks of the older *corpos-os;* compare γένες-ος afterwards γένους. Both the *Ep. de Bacch.* and the Edict of Aimilius shew also *u* before *m* in the accusatives. That the *u* of the genitive plural is weakened from *o* is shewn by the form *duonoro*(*m*) = *bonorum* on Scipio's tomb: and the tenacity with which the Italian provincials still clung to this, as to other old vowel-sounds, is shewn, e.g. by the "loro" = *illorum* of modern Italian. As Corssen well says[4]: "the

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[1] Plaut. *Capt.* 641.

[2] Corssen II. 90. The edict, discovered in 1867, is given in Roby's *Grammar*, p. 419.

[3] Corssen, II. 87.

[4] I. 246 (ed. 1).

The connecting vowel in the conjugation of verbs has been regularly weakened in Latin from the original and Sanskrit *a*; e.g. Indo-Eur. *bhar-a-mas,* and Sanskrit *bharấ-mas.* It has passed through the Graeco-Italian *o*, where the Greek halts (*φέρ-ο-μεν*), and rarely stays even at *u* (*uolumus*), but passes on to the thin *i*, as in *ferimus*[1]. This weakening is doubtless due to the unsubstantial character of the vowel—the mere link between base and termination. Before two consonants, as *-nt, -nd,* the vowel has taken a somewhat different course. Traces of the *o* are seen in the *dederont* of inscriptions, and quoted by Quintilian[2] together with *probaueront* as proofs that the Latin possessed this *o* as well as the Greek: we have *tremonti* in the Carmen Saliare, *cosentiont* on the tomb of the younger Lucius Scipio: in Plautus we find *ruont, abnuont, uiuont, loquontur,* &c., and these two forms occur even in Lucretius; the preceding *u* has preserved the *o*. The next step *u* maintains itself in *ferunt,* &c., but passes on, not to *i* but *e* in *ferentem* and *ferendum.* From Corssen's examples it would appear that *o* had become *u* about B.C. 150, in all cases where *u* was permanently retained, an exception being made where *u* precedes the *o*: but the fluctuation between *u* and *e* prevailed from the time of Plautus to the end of the Republic: when the *e* was definitely established, though it never expelled the *u* from legal or other formulae, e.g. *iure dicundo, familiae erciscundae.* The *e* in these cases is due to the fact that before two consecutive consonants the vowel sound is deadened, as will be shewn below. Still in some formations (and also in radical syllables) where *o* has been weakened to *u*, the process stops there, e.g. in *hunc, uncia, homunculus, Acheruntem, secundus, dupundi;* so also the *u* is retained in *alumnus, columna,* &c., and in *arbustum* and *arbuscula, fustis, aplustre.* *E* itself passes into *u* in

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[1] The long *a*, *e*, and *i* of the 1st, 2nd, and 4th conjugation respectively, result from contraction.

[2] *I. 4, 16.*

diurnus for *dies-nus*, comp. *hodiernus: r* being a common Latin weakening from *s*. In all these cases Corssen assumes that the *u* is due to the consonant or group of consonants following: and it is quite possible, as we shall see in the next section, that *m* (particularly when in combination with another consonant) might have this effect. But I see no reason for assuming it when *n*, *s*, and *r* are the adjacent consonants.

In final syllables the original vowel commonly sinks to *e*: a fact which Corssen explains by suggesting that though *i* be a thinner vowel, yet *e* is the most suitable for terminations, because in pronouncing it the organs of speech vary the least from their position when in perfect rest[1]. Examples will occur at once: thus, *monuere* has sunk from an original *monueront*, through the customary *monuerunt:* then the final *nt* was dropped by that weakness of articulating the final syllable, which is so noticeable in Latin, and which will be more fully discussed afterwards. Either form was in use indifferently in the last century of the Republic, and traces of the weak form are much older. Whether there was an intermediate *i* at one period seems uncertain: Corssen[2] quotes an isolated *dederi:* which, together with *dedrot* and *dedro*, may serve to shew the great fluctuation of usage. In *utere* for *uteris*, in *utebare*, *uterere*, &c., the loss of *s* has led to the same result. So also in some nominatives of pronouns the final *s* has been dropped, and the vowel, thus left defenceless, has suffered the usual degradation: so *ipse* has an older form *ipsus*, and *ille* is doubly weakened from *ollus*. In the ablative, the loss of *d* has frequently caused a double form, as from *marid*, *mari* and *mare;* the tendency was always to pass on to *e*, but the necessity of keeping the cases distinct often protected the *i*. In the later times of the Empire the cases became hopelessly confused: the dative—and even the genitive and accusative after losing their final consonants—could sink into final *e*: thus Corssen[1] quotes *Tebere* for *Tiberim*, and *mare* for *maris*. But to notice all the corruptions of the late Latin, interesting though they be as illustrations of the process which led to the confusion of cases in the Romance languages, is beyond our present plan. In the accusative as well as in the ablative of the *i*-declension in classical Latin we see the affection for *e* in the terminating syllable; the *e* in fact was almost final, for the *m* was hardly sounded. Many words exhibit both forms: thus we have both *nauim* and *nauem*, *turrim* and *turrem*, with an increasing preference for the latter form. A few are found only with *i*, as *sitim*, *uim*, and one or two others. Very rarely does the Latin avail itself of the double form to express diversity of meaning; thus *partem* is the regular accusative, while *partim* is used for an adverb, as are a very large number of old accusatives from extinct nouns in *-ti*, as *raptim*, *statim*, &c. The retention of *e* in the nominative of nouns in *en-*, (which was originally *an*, and was allowed to sink even to *in* in the other cases,) e.g. *nomen*, *stamen*, *pecten*, and very many others, is probably also due to its being the final syllable. The original *a* is kept in Sanskrit *nâma* from base *nâman*. The *e* is kept in further compounds, as *momen-tum*, &c., because followed by two consonants. In *septem*, *nouem*, *decem* the feeling of convenience introduced the *e*; whilst in Greek *ἑπτά*, &c., a recollection of the loss of the nasal kept the final vowel from being further weakened. The last instance of weakening in case-endings which need be quoted is that of the vocative of nouns of the *o*-declension, which is regularly weakened to *e*, as *Postume*.

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[1] II. 221.

[2] I. 70, ed. 1: see II. 203.

The lightness of the vowel *i* is shewn in the frequent change from *e* before suffixes. In the majority of cases this may be accounted for by the affinity of *i* to *t* and *d*. But there are plenty of examples which shew simple weakening. Thus *pudi-bundus* is from a base *pude*[2], *pati-*

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[1] II. 240.

[2] Corss. II. 310.

bulum from base *pate; rubi-cundus* from base *rube;* and it was in all probability first written *rubecundus,* like *uerecundus,* &c.: *tremebundus* and *tremibundus* both occur, the latter in Lucretius (I. 95). A greater weakening is seen in *domi-bus, uersi-bus,* &c. from *domu-, uersu-;* still greater in *publi-cus* from *poplo-* and *popolo-*, and indeed invariably before the suffix *-co-*; greatest of all in *cubi-culum* from the base *cuba;* and *uilicus* from *uilla.* With this rigidity Corssen[1] contrasts the flexibility of the Greek—shewn, e.g. in Ὀλυμπιακός and θηλυκός: yet even in Greek -ικο is the favourite form. It will be observed the weakening to *i* before *c* and *b* is sufficiently common: further examples of the latter combination are *terri-bilis* from base *terrē, credi-bilis* from *credĕ, ludi-brium,* &c. We find *i* regularly before *m,* as *regimen, specimen, castimonia, sanctimonia,* &c. Other instances (they are numerous) of this weakening before suffixes will be given in the section on Assimilation, which acts as a modifying cause determining the vowel in each case. The same weakening to *i* is found not infrequently in suffixes themselves. Thus *lo* becomes *li* in *gracilis, sterilis*[2]: *ro* becomes *ri* in *hilaris, celeris,* &c.: so also we have *volu-cri-s, ala-cri-s; muliebri-s, fune-bri-s; eques-tri-s, terres-tri-s:* the adjectives in *-tilis* are probably from an older *-tulo* or *-tilo:* and simple *-o* becomes *-i* in not a few cases, as *sublim-is, unanimis,* &c.; though the older form of the first is found in Lucretius[3], and *unanimus* was used even in the Augustan age.

Next we come to weakening in Composition.

(ii) *Weakening in Composition:* (a) *of the first member of the compound,*

First we will take those cases where the first member of the compound has suffered: in these the loss has generally befallen the last syllable of a substantive, and is analogous to weakenings just mentioned in the last section. Thus *a* is weakened to *i* in *tubi-cen, causi-dicus,* &c.: *u* to *i* in *corni-ger, arci-tenens, flucti-uagus,* &c.: *o* very frequently to *i* in *armi-ger, fati-dicus,* and many other examples given by Corssen[1]. In all these cases the appearance of the light vowel *i* explains the nature of the change: it was the striving for lightness of form which caused the weakening. Sometimes, though rarely, we find *e* instead of *i* as in *bene-uolus, male-ficus,* &c.; the forms *beni-uolus, maliuolus, malificus* seem probably Plautine, but the MSS. vary[2]. In these cases he also thinks that the *e* is later than the *i*, which is found in the MSS. of the comedians: this seems to me uncertain. At all events it appears that in many words the provincial Italian retained the older *e* where it passed in the written language into *i*: the compounds above given may therefore be instances where some accidental cause has presented a more original *e*, in the literary as well as in the spoken language.

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[1] II. 309.

[2] *Sterilus* occurs Lucr. II. 845.

[3] I. 340.

So regular had the use of *i* at the end of the first part of the compound become, that even words taken from the Greek have their spelling altered to suit the rule. Thus, as Corssen points out[3], names borrowed from the Greek comedy as Δημοφῶν and Λημνοσελήνη become on the Latin stage *Demipho* and *Lemniselene; τραγοκωμῳδία* itself is presented as *tragi-comoedia;* and at a later day, on the same analogy, the great Μιθραδάτης was known at Rome as *Mithridates.*

(b) *where the second member is weakened.*

Secondly, let us take the more numerous and important cases where the second member of the compound has suffered. With this weakening of the Latin the Greek has no sympathy. The Greek shews singular facility in the compounding of verbs with prepositions: and these numerous compounds in process of time often ceased to be felt as such, and were used to express some one simple idea which had no apparent connection with the original meaning of the two members; yet the Greek language seems never to have lost its consciousness of the truly composite character of the word: even though the meaning of the verb might be overpowered by the preposition, yet its form remained intact. Very different was it with the Latin. Here, as is obvious on the slightest glance, weakening is the rule; when the original form is retained, it is the exception. The primary vowel *a*, which we have seen elsewhere so rarely affected, is here the greatest sufferer of all, as indeed follows from its occurring in roots more frequently than any other vowel. When followed by a labial or *l*[1], it sometimes does not sink below *u*: thus we find *oc-cup-o* (√*cap*), *contubernium* (√*tab*), *in-sul-to* (√*sal*), and *in-sulsus* from *salsus*. But even the labial is commonly unable to stem its downward course: the older forms *de-rupio* and *sur-rupio* gave way to *deripio* and *surripio:* and hosts of others, such as *prohibeo, mancipium, dissilio,* &c. will occur to every one. Before final consonants other than labials, the radical vowel sinks as a rule to *i*: before gutturals, as *re-ticeo* (√*tac*), *prodigium* (√*ag*); before linguals, as *profiteor* (√*fat*), *Jupiter*, or *Dies-piter;* before nasals, as *recino* (√*can*) and *inimicus*. Further, if the vowel be followed by two consonants as well as preceded by one at least, the vowel regularly sinks to *e*, as in the examples given above[2]. In all these cases sufficient strength is supplied to the syllable by the combination of consonants: and therefore the original vowel is suffered to sink to the dull *e*, unless retained at some intermediate stage by especial affinities. Thus we have *peregrinus* from *ager*, *obsecro* from *sacer; ascendo* and *aspergo* from *scando* and *spargo;* but *infringo* and *contingo* from *frango* and *tango*, because the nasal here is not radical; it is only employed in the formation of the present base from √*frag* and √*tag*[3]. *Damno* in composition becomes *condemno*, from *annus* we have *biennium* and *sollennis; castus* passes into *incestus*, *tracto* into *detrecto;* from √*cap* we get *auceps*, &c. in the nominative. In some isolated cases, as *imbecillus*, we find *e* without the excuse of the two consonants: others, like *aequi-perare* and *per-petior*, may be accounted for by the affinities to be hereafter mentioned. *E* itself is weakened to *i* in numerous compounds, where it had taken the place of original *a* in the root: thus *lego* is *colligo* in composition; from *tenax* we get *pertinax:* but *e* is often retained, on no very clear grounds, except that these two vowels, as the weakest in the language, exchange place more easily. Corssen can give but one certain instance of *o* being shortened in composition, *illico* from *in loco:* he gives also *per-nic-ies,* compared with *noc-ere:* but the root is *nec. U* is never shortened. There are a few seemingly irregular instances of weakening of *long* vowels in composition, but always to *e* or *i*. Thus *halo* passes into *anhelo; √ag,* which is lengthened to *ăg* in *ambages, imago, farrago,* &c., lets the *ā* pass into *ī* in many compounds, as *caligo, vertigo, robigo;* long *o* is weakened to short *i* in *cognitus* and *agnitus*[1], and long *u* to short *e* in *de-iero, pe-iero,* but retained in *per-iurus.* Lastly *ē* passes into *ī* in two cases —*subtilis* from *tela,* and *delinire* from *lenis.*

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[1] II. 318, &c.

[2] Corssen II. 321.

[3] II. 319.

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[1] *Comp.* p. 258.

[2] See pages 262, 264.

[3] See above, p. 163.

It has been already mentioned that these weakenings, although very common, are by no means without exceptions. The prevailing tendency never became universal; and this in most cases is to be accounted for by the sense of the composite nature of the words being retained. Sometimes we can see a reason for this, sometimes not. Thus *prohibere* acquired the general idea of preventing, losing the primary sense of holding a material obstacle "in front:" hence comes the weakening in form. But, either because of the stronger form of the preposition, or for some other reason, the primary sense of *post-habere* was felt even when used in cases where no putting behind in space was possible: and hence the retention of the original vowel. Again *Diupater* passed into *Jupiter* without preserving a trace in common use of its derivation:

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[1] Unless we assume (with Corssen, II. 422) a participle *gnŏtus* (compare *nŏta*).

but the title *Janus-pater* was felt to be a compound from the use of its first member as a distinct word; and therefore the *a* never sank to *i*. And the idea of causation, which is obviously represented by compounds with *facere*, as *tepefacere*, &c., prevented the sinking of the vowel, which takes place in *conficere*, &c. In other cases I believe that assimilation has been the cause of many irregularities. This explains why the *a* maintained its place in *per-placet*, but not in *dis-plicet;* in *per-facilis*, but not in *dif-ficilis*. Another reason which Corssen has pointed out[1], by which the change has been prevented, is the necessity for distinguishing between distinct compounds. Thus *expando* was not allowed to sink into *expendo*, because of the necessity for keeping it distinct from the combination of *ex* and *pendo:* so also it was necessary to distinguish *contactum* from *contectum*. But this principle explains a very small number of instances.

(iii) *Weakening in Reduplicated forms:*

Lastly, we come to weakening in Reduplicated forms.

(a) *of the reduplicated syllable,*

This process (as Corssen observes) is closely connected with that just described: for Reduplication is really a sort of Composition. In the weakening of the syllable produced by Reduplication, the Greek and the Latin are on the whole in accord. Thus in the formation of present bases the vowel found in the new syllable is regularly *i*: we have *gi-gn-o* in Latin, as well as *γί-γν-ομαι* in the Greek; *si-st-o* as well as *ἵ-στ-ημι*: sometimes, however, *e* is found: examples have been given in the section of Chapter VI. especially devoted to the uses of reduplication. So also in the formation of the perfect the vowel regularly used in each language is *e*: *τέ-τυφ-α* and *πέ-ποιθ-α* stand by *ce-cid-i* and *te-tul-i:* though it must be allowed that there is much less uniformity in the Latin than in the Greek here; the Latin employs the radical vowel in the new syllable not infrequently; not indeed the heavy vowel *a*, but *o*, as in *po-posc-i* and *mo-mord-i*, *u* in *pu-pug-i* and *cu-curri*, and the weak *i* is kept in perhaps the only two verbs with radical *i* which have retained the reduplicated syllable, *di-dic-i* and *sci-scid-i*. But the strong tendency towards a uniform use of *e* is shewn by the other forms which were not uncommon in classical Latin—*pepugi, peposci*, &c.; but the original forms, *pupugi, poposci*, were again preferred, doubtless through the assimilating influence of the radical vowel. The *e* was regularly used for radical *a*, as in *dedi* (√*da*), *steti*, &c. We may infer then that the tendency to regard these new syllables as mere grammatical forms was strong even in Graeco-Italian days: and that while the Greeks after the separation attained to strict uniformity in this matter, the Italians, advancing no further, formed their tenses now on one principle, now on another: from which inconsistency we find in our grammars the anomalies of the "irregular verbs." It is difficult to trace with certainty in Latin the process by which the reduplication was often altogether dropped. Corssen thinks that it began with the compound perfects: that in these by the "Old Latin law of accentuation" the accent fell on the first syllable, e.g. *ré-tetulit*, and thus forced out the *e* of the reduplication-syllable; whence *ré-t-tulit*. (Compare the French "je ne le sais pas," where the *e* of the *ne* is lost in pronunciation.) Thus the ear grew accustomed to such possible forms as *tulit*, and when the "new law of accentuation" came in, and the accent was thrown forward in such words as *tetulísti*, the *e* again slipped out and left *t-tulísti, tulísti;* and in analogy with these accomplished facts the possible *tuli* also became actual[1].

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[1] II. 407.

(b) *of the radical syllable.*

The Latin treads its own peculiar path of degradation when it weakens the radical syllable as well; when it allows e.g. *pe-pag-i* (√*pag*) to sink into *pe-pig-i*. The same fate has befallen numerous verbs with radical *a*—*cado, tango*, &c. In other cases, chiefly when two consonants follow, *e* is found instead of *i*, in *fefelli* and *peperci*, and in other cases by reason of some affinity, as to the *r* in *peperi* (from √*par*). Sometimes the radical vowel seems to have been lost altogether, as in *feci*, i.e. *fe-faci*, then *fe-f-c-i*; that the verb was really reduplicated in the first instance is shewn by the Oscan *fefăcust* (i.e. *fecerit*) and *fefacid* (i.e. *fecit*)[1]. This weakening of the second syllable would be analogous to that of the second member in a compound (*pe-pigi, im-pingo*), and produced by the same reason, the resting of the accent at one period upon the first syllable. Corssen however believes that the *ā* in the Oscan forms was the result of vowel intensification: and that the *ē* in Latin is a parallel lengthening; just as *ago* became *ēgi*. The reduplicated syllable must then have been lost altogether from the combined influence of quantity and accent falling on the radical syllable. This explanation undoubtedly accounts for the long vowel in Oscan, which is otherwise left unexplained.

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[1] I shall have occasion in a subsequent section to explain Corssen's views respecting accentuation in Latin.

II. ASSIMILATION.

Vowel-change modified by external causes;

So far we have seen the results of simple substitution upon the vowel system of Greek and Latin. A stronger vowel has passed into a weaker one in accordance with a regular scale of vowel-strength, differing indeed for the two languages, but constant in each. Before we look at the cases where this substitution has reached its natural limit—loss—let us see what modifying causes may have sometimes stemmed, sometimes altered, this downward progress: what influence other sounds, vowel or consonant, may have exerted in particular cases upon a vowel, which when no such influences were at work simply sank lower in the scale.

hardly at all in Greek;

As I have before said, we shall find no such modification of the Greek vowels. They were too strong to become the mere reflex of a neighbouring consonant. In them was manifested all the vital energy of the language. The nearest approach to such action is that which we have seen when two vowels were thrown together by the loss of a consonant, or by other means. Then we saw that one vowel could affect another, but very rarely did one of the two (strictly speaking) either assimilate or dissimilate the other: it did not change the other into a new distinct sound more like, or less like to itself: rather the two became blended into one, after a severe contest, in which the stronger gained the day, but generally retained the marks of the conflict. And even so the agent of the change was a vowel and not a consonant.

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[1] Corssen, II. 427.

but frequently in Latin.

We may pass on then to the Latin, and see the results of the weakness of its vowel system, compared with the Greek. We have seen that the scale of vowel-strength in Latin is this—*a, o, u, e, i*: that is, a vowel allowed to sink gradually in strength, and not interfered with by other causes, would pass along this scale from *a* to *i*. And this order down to a certain point is always preserved. The vowel *a* is always the original vowel: it is never derived from anything else: it passes into *o* by weakening of articulation, and further down the scale. But neither *o* nor any other vowel ever rises, by assimilation or by any cause whatsoever, to *a*. Similarly *o* sinks to *u, e, i*: but *u, e* only rise to *o* under very exceptional circumstances: and *i* never does. These two vowels, then, retain their position in Latin as in Greek; they are not the creatures of the consonants. But here the difference in Latin begins. While the difference in strength between *a* and *o* was clearly felt, that between *u, e* and *i* was not so. Therefore these last three vowels occur often, not in their regular order but in dependence upon other sounds, through the principle of Assimilation. The difference in strength between the three vowels was not sufficiently great to make a particular divergence from the scale offensive to the "Sprachgefühl:" not only could a vowel which was gradually passing down the scale be stemmed at a particular point, as at *u*, by a labial before or after it; but even a weaker sound such as *e*, the result of old substitution for *a*, can be carried backward up the scale to *u*; as √*pel* to *pul-sus:* the effort required to pronounce *u* was not so much greater than the effort required for *e*, as the effort to put the vocal organs in the position for *e*, when the uncongenial letter *l* immediately followed, was greater than the effort to sound the more cognate sounds *u* and *l*.

Principle of Assimilation:

(i) *affinities produced by the avoidance of a difficult combination.*

For this appears to me the most noticeable cause of Assimilation; two sounds, vowel or consonant, have to be pronounced together, one of which throws unusual difficulty into the path of the other: that other sound will probably be changed to one which is more compatible with that sound which has caused the difficulty: and may therefore be said to be assimilated to it. Such difficulty will commonly arise when the two sounds are pronounced at very nearly the same point of the tube or channel which begins with the glottis and ends with the lips, but with decidedly different mechanism. Mere closeness in the tube is not generally of itself sufficient to cause assimilation[1]. Thus, for example, *i* and *y* are produced at exactly the same point in the mouth, but the position of the organs for one is perfectly compatible with that for the other: consequently there is no necessity to change either sound into something which will suit the other better. But now suppose that either *e* or *i* meets with *l*? By referring back to the description given of these sounds[2], it will be seen that for *e* (ā) and *i* (ee) a position of the mouth is required in which there is an opening between the raised tongue and the front palate—farther forward for *i* than for *e*. But in sounding *l* the point of the tongue is firmly pressed just against the centre of the front palate, the emission of breath taking place laterally. Now it is quite true that when a man pronounces his sounds—especially his vowel sounds—distinctly, there is no insuperable difficulty in keeping the open position necessary for *e* or *i* during the required length of time, and then closing it for *l*. But we are now talking of people who do not use this necessary care: for such people the coming *l* seems to throw its shadow over the preceding vowel: and instead of *e* or *i* we hear a vowel which is produced farther back in the palate, thereby avoiding the necessity of the double action at the same point: and the vowel which comes immediately behind *e* is *u*, which can be sounded even whilst the tongue is in the act of closing for *l*[1]. And since the greater ease of the combination *ul* can thus even raise the easier vowels *e* and *i* to *u*, which requires not only a more constrained position of the tongue, but also an action of the lips, which the other two do not; it is *à fortiori* intelligible why the occurrence of *l* can stem the natural descent of the vowel at the point *u*, as we have seen it do in the last chapter. This relation between *u* and *l* is commonly expressed (as by Corssen) by saying that *u* has an affinity for *l*—a phrase which is convenient, but which requires explanation. The same vowel however may have affinities for other consonants or combinations of consonants which throw similar difficulties in the way of sounding other vowels: this will appear in the following pages.

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[1] As was wrongly stated at this place in the first edition: the short description given at p. 126 was correct.

[2] At pages 85—88.

(ii) *Affinities produced by ease of combination.*

The affinity is simpler and more intelligible when the vowels *e* and *i* are the result of assimilation by consonants. The affinity of *e* is for *r* in Latin, and, though less markedly, in other languages. I call it simpler for this reason: there is no such obstacle to any vowel-sound presented by *r* as there was by *l*. The channel is open for *r* in the centre, just where it is closed for *l*. This is true even of the English *r*, the central sound. But it is much more true of the laxly vibrated or trilled *r*, which was probably the

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[1] See Roby, *Grammar*, p. 12. "When two incompatible sounds come together, usually the difficulty is foreseen, and instead of the organs being left, after pronouncing the former, to do what they can with the latter, the anticipation works a change in the former, or at least acts so as *to preserve* the latter."

Latin as it is now the Italian *r*. For this, as has been already pointed out, the closure is never quite complete, but the tongue is laid loosely along the palate, only very slightly closer than it is in the open position for *e*. The difference of position is so small that, in producing a trilled *r*, an *e* is almost inevitably produced with it. This then is a pure affinity: not the result of an attempt to avoid a difficult combination, but merely falling into one which is by its own nature easy. The affinity of *i* for the dentals, if it exists at all[1], must be of the same nature. It would seem to be a fair inference from such an affinity that *t*, *d*, *n* must have been pronounced farther forward than with us, i.e. that they were more truly "dentals." Otherwise, if they had been pronounced just at the same place as *i*, we might have expected that there would have been a struggle to avoid the combination, instead of a liking for it. But there is other evidence to shew that the dentals in Latin were sounded at much the same point as with us, only not firmly; for which reason they often pass into other sounds: whereas *l* undoubtedly was a firm and distinct sound at the end of a syllable: hence the difficulty to be avoided in *el* or *il* would be greater than that of *it* or *id*.

Lastly, it may be added that *e* and *i* are simple sounds produced by the action of the tongue only: *u*, on the contrary, is complex, produced both by tongue and lips. It is more intelligible on this ground also that *e* and *i* should exhibit a simple affinity to particular consonants. It is possible that some of the affinities of *u* may be due to the labial action, and belong therefore to the second class: such may be the affinity for *b* and *m*: the perfect closure of the lips in sounding *b* and *m* may cause them to pass through the position necessary for *u*, and so check the progress of a preceding vowel which might otherwise have sank to *e* or *i*: it never, so far as I know, raises *e* or *i* to *u*, as *l* does.

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[1] See pages 280 and 285.

1. *Vowel assimilation caused by consonants:*

I now proceed to give examples of assimilation of both these classes in Latin. I shall take, first, assimilation produced by consonants; assimilation caused by vowels will come next. It requires no introductory remarks; its nature is obvious: it shews a curious tendency towards monotony of sound, which marks a language whose vowel-system is weak.

The cases where the progress of descent has been stemmed, and where it has been altered by neighbouring sounds, may be considered together.

(i) *the vowel u.*

(i) Where the vowel in which the change results is *u*.

If we take first the connecting-vowel, which was commonly *o* in Graeco-Italian, and which of all vowels was most likely to sink to its lowest form[1], we shall observe that in some few verbs in Latin it was retained at the point *u* by the influence of the labial-nasal *m*, as *sumus*, *volumus:* but in some verbs, which otherwise bear a strong resemblance to these in that oldness of form which at a later period seems a mark of irregularity, we find the *u* already thinned down to *i*, as *ferimus:*—just as in other simple verbs, i.e. those of the so-called third conjugation. Here therefore the vowel was kept, for some time in an early period of the language, at *u* by the assimilating effect of the *m*. A similar effect—also not permanent—was produced by *f* in the days of Plautus, when *sacro-ficus* stopped at *sacruficus*[2], before passing yet lower to *sacrificus*, or *carnifex* rose to *carnufex*. So also *b* produced *bu-bus*, and *Hecuba*, the older form of which was *Hecoba*[3]. But the consonant which has by far the greatest affinity for *u* is *l*. This affinity moreover was in full operation during the classical period of Roman literature: it differs from those mentioned above, which had then almost died out. On the other hand, it would seem to have begun later: for we read *cosol* and *consol* on the tombs of three of the Scipios: while the introduction of the new sound is shewn by the wavering spelling—*u* or *o* indifferently—on inscriptions of a somewhat later date. Corssen has proved that the new sound was established among educated men at the close of the Republic, but that it never became general among the provincials, from whom the original *o* was handed down to all the Romance dialects; just like the provincial *e* for *i* mentioned already.

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[1] See p. 262.

[2] E.g. *Most.* 243.

[3] Quint. I. 4. 16; see page 258.

The principal reason of this effect of the *l* has been described above: but the nature of the sound in Latin may have contributed to produce the effect, which is more decided in this language than in any other which I know. *L* was generally a strong sound in Latin: it is said by Pliny[1] to have had a middle sound at the beginning of a word, as *lectus;* to have been strong at the end of a word—*sol,* or a syllable—*silua,* or after a consonant in the same syllable, as *clarus.* (Hence no doubt the frequent loss of such consonant or consonants, as (*c*)*lamentum,* (*st*)*locus,* &c.) He calls it weak only when it follows another *l,* as *ille.* This seems to shew that the sound of the first *l* in such places was so strong that a second one was felt to be required to express it: hence the constant variation in writing, as *Aquilius* and *Aquillius;* also the occurrence of two *l*s where etymologically there should have been but one, as *querella* and perhaps *relligio* (but the first *l* here may be an assimilated *d*), or one *l* instead of two, as *paulum, belua, solennis.* I do not now think that this assimilation is due to *l* having (like *r*) something of the vowel about it. In Sanskrit indeed there occurs a vowel *ḷi,* also a vowel *ṛi*: and we shall see hereafter that it was a slightly heard vowel in these two consonants which led to the loss of original vowels before them, as in *uinc*(*u*)*lum,* and *dext*(*e*)*ra.* But it cannot be assumed from this that a vowel before *l* had a natural tendency to turn first to *u.*

The *l* was especially powerful when followed by another consonant, in which case the preceding vowel was nearly always altered to *u*—the vowel which under the circumstances required the least effort to produce. Thus *a* passed into *u*, as *flauos* and *flagro* into *fuluos* and *fulgor*, when, through the strong dislike of the Italians for a heavy consonantal beginning, the *l* as the second consonant was thrown further onwards in the word: *e* became *u* very much more commonly, as *pello, pulsus; percello, perculsus; sepelio, sepultus,* and a host of others; compare too the Latin *mulgeo* with the Greek ἀμέλγω: *o* almost equally often as *colo, cultus; adolesco, adultus; stolidus,* but *stultus; collis* and *columna* but *culmen; pollen* but *puluis:* and compare *bulbus* with βόλβος, *sulcus* with ὅλκος. Indeed the flexibility of the Greek vowels in the same position is best seen by Corssen's examples[1] of words taken from the Greek by the Italians at an early period, and pronounced and written after their rule: thus πάσσαλος becomes *pessulus*, Σίκελος is *Siculus*, φαινόλης is *paenula.*

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[1] See Corssen, I. 219.

N combined with another consonant has the same effect as *l*, in detaining the preceding vowel at the step *u*. Thus *nuntius, Acherun(ti)s, hunc,* diminutives like *ratiuncula,* contractions like *homullus* (from *homonulus*), are all instances of a vowel which has fallen from *o*, but no more than one step. In the same way *mn* detain the *u* in *alumnus, Vertumnus, columna, aerumna,* and all that class; and *mp* or *mb* in *triumpus, umbo* (ὀμφαλός), *columba,* &c. That the nasals were the cause seems clear, because before two consonants a vowel in Latin commonly sank to *e*: and this is not surprising, since *m* was the first of the two, and could stem an *o* even when alone. But I do not understand the effect of the combinations in which *n* stands first: commonly there is no objection to an *e* before these, as in *mens, pendeo,* &c.: probably *n* with another letter was equivalent in strength to *l*, and could sometimes produce the same effect. The cases are not on the whole very numerous, and it would seem that the tendency was strongest in pre-Augustan times, and then rather ceased, for Ennius wrote *frundes,* and Lucilius *dupundi.* Among the provincials the *o*-sound was probably often retained, and passed on to the Romance language, e.g. *molto, mondo,* &c.

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[1] II. 142.

(ii) *the vowel e.*

(ii) Where the vowel in which the change results is *e.*

This result, as will be inferred from the previous account, is produced especially by *r,* the most cognate of the consonants. This is most conspicuous in the cases of neuters ending in *us* (*os*), where between the two vowels *s* passed into *r,* e.g. *genos-is* became *genoris* and then *generis;* so also *operis, sideris, ueteris,* and a very large number of similar nouns. It is perfectly impossible to say why in *corporis, pecoris, facinoris, dedecoris,* and several others, the *o* was still retained: some principle of assimilation or dissimilation between the vowels may have helped, but it was not the same for all. Sometimes the double form occurs: *feneris* and *pigneris* are both old, yet they did not expel the *o* forms: *temperi* is preferred for the adverb (i.e. the locative), *tempori* for the dative[1]: I know no other case where even so slight use of the difference was made. In other cases original *i* rises to *e* from the influence of *r*: as *cinis, cineris;* so also *uomeris, pulueris.* Next, Corssen quotes the terminations *ber, cer,* and *ter,* the vowel of which in Indo-European was certainly *a*[2]. The uniformity of the vowel before the termination *-ro-* (*-ero*) has been already contrasted[3] with the easier Greek vocalism. Lastly, in the conjugation of verbs *e* is always attracted by *r,* which in Latin seems to have had a peculiar sound; so *dedī-sont* passed into *dedē-runt*[4].

I mentioned above, that *e* is the favourite vowel of the Latin in closed syllables before more than one consonant, as *vertex* (from *vertic-*) *silex, apex, ilex,* &c.; the compounds of $\sqrt{}$*cap* (seen in *hosti-capa-s,* and occurring as *cup* before a vowel, as *occupo*), e.g. *anceps, manceps*, &c.; *ales* for *alit-s, miles, abies, hospes*, &c.; *hones-tus* from *honos, sceles-tus* from *scelus, pedester* for *pedit-ter*(*o*)-, and numerous others. This combination even caused a further weakening of *u*, as *ferentem*, &c. (contrast *euntem*); the old *u* being retained in legal formulae. The reason of this, it seems to me, lies in the dulness of the vowel: it has the least amount of character of any; and therefore it best suits a syllable in which the consonantal element is strong. Prof. Heyse's character of *e* may be assented to without difficulty; with respect to the other vowels his conclusions are so ingenious that one cannot but wish that they were borne out by facts. Of *e* he says that it is the vowel of least "tone:" it expresses less of sensation than any other, and consequently extends its dominion over speech with ever-increasing force, as the exponent of reasonable speech: colourless as water, it serves as the element to float consonants: it is the voice of emotionless reasonable speech[1].

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[1] The form *temperi* occurs 19 times in Plautus; *tempori* not at all; neither in Terence. Wagner on Plaut. *Aul.* 451.

[2] Corssen, II. 200. [3] See page 258. [4] Corssen, II. 208.

(iii) *the vowel i.*

(iii) Where the vowel in which the change results is *i*. It may seem needless to treat of this vowel as the result of assimilation. If *i* be the weakest of the vowels, it must be the point to which all vowels sink if left to their own course, without any modifying influences. It may be said on the other side that *i* is not invariably the weakest of the Latin vowels: there are cases in which *i* has sunk to *e*, as we have already seen, at the end of a word, or when the final consonant was so little heard that the vowel was really final. But I do not think that in any of these or similar instances *i* has been kept back by assimilating influences from sinking to *e*. The assimilation therefore in this case must be understood to be no more than the result of affinity between *i* and other sounds, which generally compelled a vowel to sink as low as it could in the scale: it might not have done so, had no such influence been at work. But I have already said that the affinity of *i* for the dentals is by no means easy to explain. According to Corssen[1], who rejects Priscian's rule that final *n* was strong, medial *n* weak—*n* was strong in the middle of a word, at least where it was an element of either base or suffix: it can hardly have been strong in a prefix, such as *con*, when it generally vanished. Corssen instances the various spelling of words like *Porsena* or *Porsenna* to prove his theory; just as the strength of medial *l* was inferred from the same reason. If this be so, we can understand why *n*, which is a fine clear sound if pronounced with distinctness, would naturally draw to it the finest and most distinct of the vowels. But undoubtedly the nearness of the points at which the two sounds were produced has also much to do with the fact; and we shall see that *i* has an affinity for other dentals as well. The *i* occurs before *n* in *terminus* (Greek -μενο-), in *diutinus*, where the suffix is the Indo-European *-tana;* regularly before the suffix *-no*, as in *dominus*, *geminus*, *sarcina*, *pagina*, &c.: it supplants *o* in oblique cases from bases in *on*, as *cardo*(*n*), *cardin-is*, and *ordinis*, *hominis*, *marginis*, &c.: and occurs in a few radical syllables, as in *Minerua* for older *Menerua*, and *uindico* (compare *uenia*). This tendency to substitute *i* for *e*, as we have already seen, was the mark of cultivated, as opposed to rustic, Italian.

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[1] Heyse, *System der Sprachwissenschaft*, p. 79. I owe my knowledge of this brilliant writer to Mr Farrar's *Chapters on Language*. In the chapter from which the above is quoted, he distinguishes the vowels as the natural exponents of different sensations: a distinction which, it is to be feared, has perished in a far pre-historic stage of language, at least for the other vowels. See *Chapters on Language*, p. 86, note.

I was also attracted to the dental spirants. The best proof lies in the transliteration of κωμάζω by *commissor* (the double *s* required to represent ζ may have had a peculiar force here) or κάναστρον by *canistrum;* here again we have two dentals at work. But the same change occurs regularly before *sc*: as *tremisco*[2], *adipisco*, *gemisco* &c.: the *e* is generally retained however when the *sco* is added to a verbal base in *ē*, as *fervē-sco*, &c.: yet even here sometimes both forms are found; we have *conticiscam*, *luciscit*, &c.[1] An important example of the attraction of *s* alone is furnished by the termination of comparatives, *-ius* for older *-īos*. Here the *i* was sometimes absorbed by the *u*, as in *minus:* but more commonly the *u* itself sank to *i*, which then coalesced with the preceding *i*, and should therefore have produced a long final syllable in *magis*, *satis*, &c.; but the weak pronunciation of the last syllable in Latin seems in every case to have let the long vowel pass away[2]. Lastly, *i* occurs in connection with *t* and *d*. The instances where this assimilating power is best seen are the participles or participial formations from the second conjugation, as *meritus* from *mere-* (but *merētod* occurs in the well-known epitaph of the son of Barbatus), *tacitus* from *tacē*, and others too many to quote. The same change is seen sometimes, though rarely, in the first conjugation, as *domitum*, *cubitum*, *crepitum*, *uetitum*, &c. In these cases accent no doubt had much to do with the weakening: the unaccented middle syllable could not maintain its length, and the shortened vowel easily sank to *i*. The fact that *i* is always found before the suffixes *-tion*, *-tia*, *-tāt*, *-tudin*, *-do*, &c., should perhaps not be pressed as an instance of assimilation, for we have already seen[3] that in all such formations the final vowel of the base has a natural tendency to sink to *i* as the easiest vowel, e.g. in *belli-cus*, *rubi-cundus*, &c. In spite of the tendency to *e* before two consonants we find *i* when both are dentals: e.g. *intus* (ἐντός), *indu*, for the *endo* of the XII. Tables, *uindico* (mentioned above) and *uindex*, *uindemia*, &c.: also before *gn* in *ignis*, *tignum*, *signum*, *pignus*, which is some slight ground for believing that the *g* here was the guttural nasal: however the same change is seen where the *g* follows the *n* in *lingua*, *tinguo*, *[illegible]inguis*, &c. and seems due here to the *n* alone.

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[1] I. 248.

[2] But *tremesco*, Lucr. VI. 548.

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[1] Plaut. *Mil.* 410; Terence, *Heaut.* 410.

[2] Corssen, II. 299.

[3] At page 264.

In conclusion then, the three weak vowels have their own peculiar affinities; *u* for *l* and labials, and *e* for *r* and closed syllables; *i* for dentals: these affinities being the result either of the difficulty of other combinations or of the nearness of the point of contact of the two sounds.

2. Vowel assimilation caused by vowels.

Next we have to consider the cases where one vowel has assimilated another. This phenomenon is of comparatively rare occurrence. We have often had occasion to remark the weakness of the Latin vowel-system: consequently we shall not expect the vowels to exercise so strong an influence over another vowel as the consonants did. The following examples are derived, as before, almost entirely from Corssen.

(i) When two vowels come into actual contact, they have a tendency to approximate to each other.

Thus when *y* was resolved into *i* in (*e*)*syam*, the subjunctive of √*es*, the difference in point of distance between the two vowels *i* and *a* made the form *siam* unpleasant: hence, through the influence of the *i*, the *a* drew one step nearer to it, and became *e*—*siem*, a form which constantly occurs in Plautus[1]. That *a* really occurred in this form in Latin, as well as in Graeco-Italian or Indo-European, is shewn by those cases where the *y* was entirely dropped, not resolved into *i*, when the *a* remained intact; as in *reg*(*y*)*am*. So also we have *eam* from √*i*, *queam* from √*qui*—where the radical vowel is changed. We have already seen that the Italians kept *e* in many words where it sank to *i* in the Latin: with the same preference for that sound they assimilated *i* to *e* in the common termination -*io*: thus Corssen[2] quotes *fileai* from *Praeneste*, at an earlier date than 218 B.C.; not forty years later than the *filios* of the younger Scipio's tomb. Similarly, the difficulty of the combination *ia* produced the numerous class of secondary nouns in -*ies*, e.g. *durities* by the side of *duritia*.

Another effect of this assimilating influence of one vowel on another is to check in some cases the same power when exercised by a consonant. We have seen already that *o* followed by *l* almost always sinks to *u*. But this change does not take place when *i* or *e* precede *o*: apparently the labial action for *u* was felt to be inconsistent with these two vowels; and they therefore by their assimilating power retain the original *o* in *uiola, filiolus, gladiolus*, &c.; in *aureolus, luteolus*, &c.[1]

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[1] E.g. *Capt.* 736.

[2] II. 310.

(ii) When two vowels are separated from each other by a consonant, they tend to become identical.

Thus *e* assimilates a preceding vowel in *bene*, originally *bono*, which by regular weakening became *bone;* then the feeling of the coming *e* in the last syllable modified the *o* in the first. Similarly *illec-ebrae* owes the *e* of its second syllable √*lic* to that of the third. *O* has changed *u* and *e* in a previous syllable, in *soboles* (*sub*) and *socordia* (*se*). So also *u* has operated in the suffix of *tug-urium* on the vowel of √*teg*, and perhaps caused partial assimilation in *so-luo, so-lutus* for *se-luo*, like *se-cors;* we find *lucuna* for *lacuna*, and *rutundus* in Lucretius[2]. I think it possible that the same influence may have produced *diurnus* (*dies*), and *arbustum* (*arbos*). But more numerous are the cases where *i* has affected a preceding vowel, Thus *ne-hilum* becomes *nihil*: the old *i* in *mihi* is preserved by the final *i*, though in *mei, meus*, &c. it has become *e*: √*sul* in *consulo* passes into *sil* in *consilium, facul* becomes *facilis; semol* (*simul*) becomes *similis:* and √*cal*, which is found in καλύπτω and *calim* (the old form of *clam* according to Festus), becomes *occulo*, but *super-cil-ium: Caecus* becomes *Caecilius;* and contrast *Proculus* with *Procilius, Lucullus* with *Lucilius*. I do not think that *inquilinus* by *incola, inspicio* by √*spec*, can be fairly quoted as instances[3]: because the vowel would have in each case sunk to *i* by itself. A forward action is clearly to be seen, as I think, in *difficilis* and *displicet*[4]: *i* is not found in *perfacilis* and *perplacet*, where no *i* precedes.

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[1] II. 347.

[2] II. 451, III. 1031.

[3] Corssen, II. 359.

[4] See page 269.

Apparent influence of the vowel i.

It appears from these examples that by far the greatest part in this kind of assimilation is played by the vowel *i*—the weakest of all: a fact which is certainly surprising. Corssen[1] gives the analogy of ä, ö, ü in German, which are commonly produced by an *i* in the following syllable: e.g. mann, männlich: and he concludes that *i*, thin though it be, requires for its pronunciation a considerable tension of the organs of speech, differing herein much from *e*. This explanation is most unsatisfactory. It is this effort required in pronunciation, and nothing else, which is the mark of a *strong* vowel: and yet nothing can be plainer than the fact that *i* is weaker than *a*, *o*, or *u*. And certainly no such tension is absolutely required to sound the *i*, though greater power may accidentally be applied to it, as it may also to *e*. The truth is that the real cause of the change is not the influence of the *i*: the real cause is the natural tendency of every vowel to grow weaker in Latin: the *i* only lends a helping hand, determining how far the change should operate—in this case to the utmost possible limit, sometimes giving an additional impulse to the vowel affected, which might otherwise have resisted the primary tendency, as *difficilis*, mentioned above. In a word, it is only a modifying, at most an auxiliary cause of the change: and this is in accordance with the view of Assimilation which I have given. Corssen[2] gives some interesting examples of *a* produced by assimilation in the late popular-Latin: e.g. *ansar* for *anser*, *parantalia*, &c.: and he points out how *a* in this way appears sometimes in the Romance languages, e.g. *marchand* from late Latin *marcator*, *sauvage* from *salvaticus* (*silua*). It seems to me unquestionable, that this *a*, so produced, was not the full sound (ah) in Latin: though it may have become so in the descendants of the Latin, all of which, as has been pointed out, were subjected to foreign influences. It may have been (ă), but more probably the neutral vowel[3]. It is observable, that in almost all cases this *a* precedes an *r*, or *l*, that is, just the two sounds before which the neutral vowel is most common in England, e.g. *altar*, *fatal*.

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[1] II. 380.

[2] II. 373.

[3] See page 84.

III. DISSIMILATION.

Less frequent in its operation: acts principally as a bar to further change.

This principle has of course a less wide field than that which we have just considered. The same sound is less likely to occur twice in inconvenient proximity, than different sounds. Like Assimilation, it is sometimes an auxiliary cause of new change, sometimes it prevents the regular process of change. Its operation is restricted to some of the places in which either by regular substitution, or by the loss of a letter, or by the resolution of a semivowel into a vowel, or by the addition of suffixes to roots or bases, or by two of these causes combined, the *same* vowel-sound occurred twice. It acts, I say, only in some of these places, because the most obvious method was to let the two vowels so meeting coalesce into one long vowel: and this often took place. For example, when *sequ-ontur* was tending to become *sequ-untur* by the regular substitution of *u* for *o*, since the double *u* would have been difficult to pronounce, the two often coalesced, and (*q* being rarely written after the loss of its peculiar attendant *u*) the result was *sec-untur*, when the tendency to weaken *o* to *u* in these forms had become too strong and too universal to be resisted. But the natural dislike to such a transformation is seen in the fact that the old spelling *sequontur* was still retained even in the Augustan age, side by side with the new. Similarly we find in indifferent use *equos* and *ecus*, *aequom* and *aecum*, *quom* and *cum*, &c. In all these cases this retention of the *o*, this bar to the regular change, is due to the principle of Dissimilation. In some instances no doubt this principle was aided by another cause. If the weakening of *o* to *u* had taken place, and the two vowels had then coalesced, there would often have resulted much confusion. Thus *uoltus* would have been allowed to sink into *ultus; uolnus* into *ulnus*, &c. Here therefore there was all the more need for letting the natural tendency to Dissimilation act fully.

Corssen gives as examples of this bar, beside the well-known *uolt, uolcanus*, &c., the cases where original *o* is retained in the suffix *-olus*, which generally sank to *-ulus;* as *friuolus, Scaeuola*, &c.[1] The combination *uu* seems to have only been tolerated when another vowel followed, in which case the second *u* was of course really the semi-vowel *v*, and there was no real meeting of identical sounds, e.g. in *illuuies.*

The meeting of *i* with *i* occurred more frequently: e.g. from the resolution of *ei* into *i*, as *petiei, petii; uieis*[2], *uiis.* Here the combination was allowed, because contraction would in such cases have produced immense confusion: but where possible it was permitted. Thus when *De-is* became *Diis* by weakening, it was at once shortened into *Dis;* and genitives like *Vergilii* were also contracted, except when a poet found the older form more convenient. To avoid the double *i*, the radical vowel of √*iac* was long kept at *e*, e.g. *proiecere, traiecere*, &c., found in Lucretius and Virgil; and when the *e* had sunk to *i*, the difficulty was avoided by dropping one of the vowels, as *obicio, adicio*, &c.[3]

But when the difficult combination arose from the meeting of the end of a nominal base with a case-suffix, or even a new formative suffix, then dissimilation stepped in and prevented the occurrence of the sound. One of the two vowels became *e*; thus *ali-inus* became *alienus.* Similarly when *e* would naturally have sunk to *i* in the last syllable of the root, it was retained, as in *abietis*, not

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[1] II. 392, &c.

[2] See p. 152.

[3] At a somewhat late time, if we may judge from poetry. Thus Virgil (*Aen.* VI. 420) has *obicit offam* (=*obyicit*), but Lucan (IX. 188) *Pompeiumque deis obicit.* Yet in Virgil we find *reice* scanned as a dissyllable, which could not be if each *i* was heard.

abiitis, and *Anienis* from *Anio*(*n*), though from *cardo*(*n*) we have *cardinis*. So also in the formation of a secondary noun we see the same influence. Although before *-tat* bases in *o* regularly allow the *o* to sink into *i* (as from *uero-*, *ueritat-*), yet if *i* precedes, the *o* does not sink below *e*, as in *pie-tat-*, *uarie-tat-*, and many others[1]. The root AG is frequently used to form a sort of causal verb[2]; in which case the vowel naturally sinks to *i*, or is altogether lost, e.g. *leuigare*, *pur*(*i*)*gare*, *obiurigare*[3] and *iur*(*i*)*gium*. But when *i* precedes, this vowel was kept at *e*, as *uariegare*. Lastly, the older form of the genitives *ipsius*, *illius*, &c. is to be accounted for on this principle. We have seen the *u* occurring in forms like *corporus* (p. 165), a weakening of Graeco-Italian *-os*. But this *u* regularly sank to *i*, and consequently we might have expected to find *ipsiis* or *ipsis*: the change was prevented by the preceding *i*.

Finally, the combination *ee* is avoided in *eeis* by the forms *eis* or *ieis*, both in the nom. and the dat. or abl. plural. And the only reason, apparently, why we find the one relic of the older form of the present participle, so often mentioned, *euntem*, is that if the usual weakening took place in it, we should have a double *e* sound.

These, with a few others of the same class, are the main examples of Dissimilation—a principle which (as will have been observed) acts almost exclusively in hindering weakening, which but for it would, on the analogy of similar forms, have certainly taken place.

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[1] Corssen, I. 310.

[2] So apparently in A.S. we have *eád-ig-an*, to make happy, from *eád*, happiness, *fand-ig-an*, to cause to find, to search out, tempt.

[3] In Plautus, *Trin.* 68, ed. Brix, though Fleckeisen reads *obiurgito*, not so well, I think.

IV. LOSS.

1. Loss of Greek vowels.

I return for a short time to the Greek. As the last two forms of change had little effect on the vigorous vowel-system of the Greek, it is only natural that it should have suffered still less from loss. Indeed the only class of words in which a vowel is dropped with any regularity is in those verbs which formed their continuous stem by reduplication. In these the radical vowel commonly fell out. Many of the cases have been already mentioned; as *γί-γ(ε)ν-ομαι, μί-μ(ε)νω, πί-π(ε)τ-ω πέ-φ(ε)ν-ω,* &c. This loss is one reason for believing that the accent in Greek was not originally regulated by the length of the last syllable, but was free to fall, as was natural, on whatever syllable more especially modified the original idea—here therefore on the first: for had it been on the radical syllable always, as would be necessary under the later law—e.g. *μι-μένω,*—it is almost inconceivable that the accented vowel should have been suffered to drop. It is quite true that this view is not free from objection, though less so, as I think, than any other. For example, it may be asked how it happened that, if the accent was always on the reduplicated syllable, the vowel was yet regularly weakened to *ι*. We may answer that it is less remarkable that an accentuated vowel should be weakened than that it should be lost: but this answer allows the difficulty. It is hardly conceivable that the accent should have been originally on the radical syllable, and remained there after the reduplication sufficiently long to allow the new syllable to be weakened regularly, and then—after the importance of that syllable had so far faded out of the consciousness of

Perhaps produced by greater freedom of the accent at an earlier period.

those who used it—should have been thrown back on to it, and so the radical vowel have been lost. It would destroy the very principle of the theory, that there was a natural connection between accent and sense, if we should thus suppose that a syllable could be accented after it had lost its meaning, in times when accent had not yet become bound by quantity. Some other explanation must be found if this theory is to be maintained. May the change of the vowel in the reduplicated (and accented) syllable have been due to dissimilation as well as to weakening? We have already seen in words like γέγονα how the Greeks avoided the occurrence of the same vowel in consecutive syllables. As the vowel in the radical syllable was nearly always ε in those verbs which formed their protracted stem in this manner, the choice of ι for the vowel of the reduplicated syllable would thus be explained: it gives a variation in sound, but the smallest possible.

The theory of the original freedom of the accent is maintained by Corssen in the third division of his work on the Latin language—that which deals with accentuation—the *Betonung*. It is true that this part is open to many objections: it contains more of hypothesis and less of facts than the *Aussprache* and *Vokalismus:* and difficulties, such as that mentioned above, are not met. Still on the whole his theory seems to me more satisfactory than any other. It is confirmed to some extent by the Sanskrit verbs which are analogous to those which we are considering; for at least in the singular they are accented on the reduplicated syllable. The augment too is accented in Sanskrit; as on this theory it could not fail to be, if the augment was originally (as seems certain, whatever may have been its meaning) an addition from without, and alien to the verb; and so differing in kind from reduplication, which added no new element to the root. So this principle, if true, would explain other losses in Greek which occur in augmented tenses, but not so regularly as in the present: I mean cases like *ἔ-σ(ε)χ-ον*[1] from √*σεχ* or √*σχε*, and *ἑσπόμην* for *ἐ-σεπ-ομην*; where the rough breathing was probably a mistake, on the analogy of the present *ἕπομαι* and the imperfect *εἱπόμην*; in this last the breathing was misplaced, the process being *ἐ-σεπ-όμην*, *ἐἑπόμην*, *ἑεπόμην*, *εἱπόμην*.

Lastly, we find a vowel sometimes lost in formative suffixes before a case suffix, e.g. *πατ(ε)ρ-ός*. The fact that the *ε* does not fall out in the accusative where it is accented, whilst the genitive and dative have the accent on the case-suffix, seems to point again to accent as the cause of the loss. But why the accent was on the suffix in the genitive and dative alone, is not so easily answered. Was the accent originally on *all* case-suffixes—as modifying the radical idea? and was it then commonly thrown back from the natural tendency in all languages—less felt in Greek however than in most—to shorten a final syllable? But I confess myself entirely unable to explain why particular cases like *πατρός* still kept it unchanged.

2. *Loss of Latin vowels.*

Examples of loss in Latin are much more numerous—another proof of the weakness of the Latin vowel system compared with the Greek. They are so various that it is difficult to bring them under general heads. Perhaps the best plan will be to give a list of the most important, and see afterwards what general conclusions may be drawn from them.

Loss of a;

Corssen[2] now rejects the hypothesis that *a* is lost in the perfects of the first conjugation—e.g. *cub(a)ui, nec(a)ui,*—formed, like others of the same class, from the bases *cubā, necā,* &c. by the addition of *ui* the remnant of *fui*[3]: for it is possible that this termination was joined directly to the simple root, in which case there would have been no loss of *a*, whilst the present was formed from a base *crepā:* compare *γαμ-εῖν* but *γαμέ-ω* in Greek: and in one case at least we have an infinitive, *son-ĕre*. On the other hypothesis the weakened supine *cubitum*, where the reason for the *i* lies in the dental *t*, probably led the way to *cubĭui* and then to *cubŭi*. In nouns this loss is rare: but *uirgo* may be a shorter form of *uirāgo*[1]: *clarus* with *clamor* and *gratus* are from √*cal* and √*ghar* (*χαρά*): and Corssen points to *palma* and *cupressus*, which represent the Greek *παλάμη* and *κυπάρισσος*.

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[1] Schleicher, *Comp.* 57.

[2] Corss. II. 520 note.

[3] See Schleicher, *Comp.* 828.

19—2

Loss of o;

The loss of *o* (I take the vowels according to their strength) is even more rare. We find *uict*(*o*)*rix*, *alt*(*o*)*rix*, *pist*(*o*)*rina*, &c. where the new suffix has forced out the vowel of the old.

Loss of u;

The next vowel—*u*—is only lost before *l*: and I have before said that *l* has something of the vowel in itself. Thus *uinclum*, as is well known, occurs at least as often as the older *uinculum* in verse-writers even of the Augustan age. Others like *poclum*, *uehiclum*[2] do not seem to occur in the literary dialect later than the Plautine age, till *poclum* is found again in Prudentius. Some words appear with a double form in Plautus, as *populus* and *poplus*, *disciplina* and *discipulina*, and *templo* but *extempulo*[3]. These "syncopated forms" when they occur in Latin poets are generally explained as "poetical licenses"—a radically false theory, if it means that Virgil and Horace used irregular forms which ordinary men of the time could not have used. The truth is the very opposite of this statement: a pronunciation of *uinculum* and similar words, in which the *u* was either barely heard, or not heard at all, was the universal pronunciation of the day: it was one of the regular weakenings of the popular use, which can be distinctly traced upon inscriptions through many centuries, and always on the increase: which was also prevalent among the different Italian dialects. Educated men of Virgil's day laboured to restore the *u*; and there can be no doubt that one effect of the Augustan literature was to stem to some extent the general corruption of the language as shown in this and numerous other ways. Only these writers did not entirely debar themselves from the forms in daily use. Therefore their use of these vulgar forms was an infringement of their rule as poets, not such an infringement of some stricter non-poetical standard as is implied by the term "poetic license." The *u* also fell out almost regularly in the secondary suffix *-ulo*, when preceded by *n*, or *r*, which then assimilated themselves to the following *l*, and so produced the terminations *-ello, -illo, -ollo, -ullo;* e.g. *ocellus* (for *ocululus*), *stella* (for *sterula*), *homullus* (for *homonulus*), *corolla* (for *coron-ula*), *stilla* for *stir-ula:* sometimes *-ulo* was added to a word in which it already occurred, with a similar result; as *pupillus* for *pupul-ulus* (that is *pupulo* + *ulo*), *oscillum* from *osculum*, &c.; see the lists given by Corssen[1].

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[1] It is connected, perhaps with more probability, by Curtius with *ὀργάω*, *ὀργάδες*, from a root VARG = to swell.

[2] Plaut. *Pers.* 775, 782.

[3] *Bacch.* 968.

Loss of e;

Just as *u* fell out before *l*, so *e* was lost before *r*; especially in the suffixes *-ero, -bero*, &c. Thus we have *lib*(*e*)*ri*, *cap*(*e*)*ri*, *inf*(*e*)*ra*, *latē-b*(*e*)*ra*, and numerous others. Similarly the suffix *-tero* is weakened to *-tro*, as in *dextro, sinistro, neutro, nostro;* and then often to *-tri* as in *equestri-s*, &c.: so also *ac-ero* becomes *ac-ri-s*. And the same weakening which we have seen in πατ(ε)ρός is found in *pat*(*e*)*ris*, also in *ag*(*e*)*ri*, *aeg*(*e*)*ri*, *nig*(*e*)*ri*, *pig*(*e*)*ri*, &c. These are common and well known. Rather less obvious is the loss of *e* in *salictum;* compare *dumetum, quercetum*, &c. This vowel is also lost in perfects, like *ă* above: as *deb*(*e*)*ui*, *doc*(*e*)*ui*, *hab*(*e*)*ui*[2].

Loss of i;

But the loss of all these vowels is small compared with that of *i*, the thinnest of all the vowels and most likely to die out; both when it was radical, and when it was the substitute for a stronger vowel. From the long list of its omissions[3], it seems capable of falling out of almost any place. Thus it disappears before *c* in *calx* (*calic-*); before *g* in *pur*(*i*)*gare*, *iur*(*i*)*gium;* before *d* in *cal*(*i*)*dus* (the true form of Augustus' day, on the authority of the Emperor himself[1]), *ual(i)de, u(ui)dus, au(i)deo, gau(i)deo* (but *gauisus*); before *t* incessantly, as *miser(i)tus*, often in Lucretius in words which the next generation of writers did not allow to be contracted, as *pos(ĭ)ta*[2] (though the compound, *re-pos(i)tus*, is a favourite both of Virgil and Horace, and demands the weakening by its length); in *al(i)tus, quaes(i)tor, audac(i)ter*, &c.; in the old verbs *fer(i)t, est* (i.e. *edit*), *uol(i)t;* (that is to say, if these forms did really employ the connecting vowel analogously to the other persons—*ferimus*, &c.); before *m* and *n* at the beginning of numerous suffixes, as *summus* for *supimus, bruma* for *breuima, teg(i)men, sig(i)num* (whence *siginulum* or *sigillum*), *alum(i)nus*, &c.—for the Graeco-Italian *e* in these formations probably passed through *i* before it was dropped, on the analogy of *terminus*, &c.; before *s* in comparative suffixes, if Corssen be right in his very ingenious suggestions that, on the analogy of *magis, satis* (i.e. *magius, satius*, so also *mox* is a neuter comparative from *mouoc-ius* (√*mov*), whence *mouoc-is* and *mo(u)oc-s*, the *i* being dropped before the *s*; also that *uix* = *ui-c-ius*, a comparative of *ui-co*, an adjective formed from *uis*[3]; as also the forms *als, ex, uls, su(b)s*, &c., where the *s* is difficult to account for, and this (conjectural) explanation seems to me more probable than any other. It is certainly confirmed by the superlative forms in *-sto* (the Greek *-ιστο*): these are probably only the comparatives intensified by the addition of the pronominal base *-to;* then the *i* is traceable in *pra-is-to* or *praesto* "near," as "most before" you; it is lost in *iuxta* for *iug-is-ta* "most joining on." The *i* is also lost before *s* as before *t* in verbal forms like *es, fers*, &c.

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[1] II. 527—532.

[2] Corssen, II. 540.

[3] Ib. 542—573.

Much more numerous and important are the cases where *i* is lost in verbal formations before *s*, when another *s* precedes, which after the loss of course coalesces with the other. Such forms are *dixti* for *dic-si-sti;* which occurs very frequently in the comedians, but not again in literature till the Silver age. Similarly the subjunctive perfects *faxim,* for *fefaci-sim, ausim* for *ausi-sim,* the futura exacta *facso* for *fefaci-so*[1], *occepso* for *ob-cecapi-so,* the pluperfects *ex-stinxem* for *extinxi-sem, uixem* for *uixi-sem,* and the infinitives *dixe, traxe*—all shew the same loss. Schleicher indeed objects to these formations on the ground that the second *s* between two vowels must have become *r* and the *i* before it changed to *e,* as actually did take place in *fecerim,* which certainly followed the common Latin rule. Therefore he assumes[2] an older and a younger formation; and that in the older the suffix was added directly to the root, as *fac-sim.* This I think is improbable from the very periphrastic character of these tenses: compare the passive *factus sim,* where the first part is recognised as a complete *word,* not a mere root or even a base: and I think that the weak *i,* coming in the *third* syllable after a strong explosive sound, would scarcely be heard; and so the necessity for changing *s* to *r* would not be felt: afterwards when *fefaci* had sunk to *feci* the *i* would be more distinctly heard and affect the following *s* more. The history of these forms is the same as that of *uinclum*, &c., mentioned above: they are found constantly in the comic writers who represent the pronunciation of ordinary life, and they were doubtless heard in ordinary talk in the Augustan age, and are therefore sometimes, but very rarely, used by Horace and Virgil. The other conjugations, the 1st, 2nd and 4th, could form their futurum exactum and subjunctive perfect in the same way from the earliest times down to the days of Ennius and Plautus, but not much later. Thus in Plautus we have *amasso* (i.e. *amaui-so*, which regularly became *amauero*), *seruasso*, *prohibessis* (i.e. *prohibeui-sis* or *prohibueris*). Here it would seem that the loss of the *u* as well as the *i* led to a compensatory doubling of the *s*[1].

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[1] Quint. I. 6, 19. The Emperor may at least be evidence to a form, even if he, like Sigismund, could not create it.

[2] *I.* 1059.

[3] See *Krit. Beiträge*, p. 62.

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[1] The old explanation of these forms, that e. g. *faxo* was formed directly from √*fac* by adding *so,* as in Greek (see especially Madvig, *Opusc.* II. 64, &c.), is approved by Roby (*Grammar,* 198). It is to me improbable, (1) because if that method of forming the future had survived in Latin at all, we should surely have found more traces of it; (2) because the future suffix was *-sya,* and this should have appeared as *-sio* in Latin; (3) because compounds like *occepso* must be later than *capiam,* and yet they exhibit this assumed older form of the future suffix; (4) because these forms can hardly be separated from the subjunctives; (5) because *faxo,* at least, is unmistakeably in use the future of the completed action. The objection, on the other hand, that *s* must have become *r* between two vowels is undoubtedly formidable: but I think the account given above gives some explanation of the difficulty, though it does not remove it.

[2] *Comp.* p. 331.—Corssen assumes, to account for these forms, an indicative perfect *faxi,* i. e. *fac + si,* a later form and distinct from *feci* whence *fecerim* (=*fecī-sim*). Such perfects no doubt often occurred; but here I prefer to derive both forms from a reduplicated perfect, which occurs in the Oscan, *fefaci.* This can be weakened in two ways, one as in the text, the other by dropping the *a,* through the accent being on the reduplicated syllable—*fef(a)ci, fe(f)ci, feci.*

I is especially lost in compounds.

The cases in which the vowels have fallen out in composition are sufficiently numerous and peculiar to deserve a short separate notice[2]. The stronger vowels indeed did not fall out under these circumstances, at least without first sinking to a lower sound: *co-ago*, doubtless, first became *coigo* on the analogy of *red-igo*, &c. and so passed to *cogo*. And most of the instances in which *o* seems to have fallen out, appear to me rather cases of contraction, e.g. *quorsum* from *quo-uorsum*, where we have a sliding together of the double *uo*, than an elision of either: this is true also of *prosa* for *pro-uorsa*, and Corssen's assumed *mouox;* of *co(i)uncti* and *ho(i)ornus* where the lost letter was *y*; in all these cases the vowels which met were the cognate *o* and *u* which easily united. The loss of *u* is singularly rare; it is apparently confined to the last syllable of *manu* in compounds like *man(u)suetus*, *man(u)datus*, *man(u)ceps*, &c.: the length of these words rendered the loss of some part inevitable, and therefore the unaccented vowel was naturally the first to go. The loss of *e* and *i* is common enough. Thus *e* is lost in *ol(e)facio*, *nuncupo*, i.e. *nomen-cupo*, *posse* for *pot(e)se:* in numerals often with a consonant, as *quin*(*que*)*decim*, *sept*(*em*)*ussis*, &c. Its loss in the reduplicated perfects is well known, e.g. in *rec*(*e*)*cidi*, *ret*(*e*)*tuli*. In all these cases the first part of the compound has suffered: the loss has fallen on the second member in *prae*(*he*)*ndo*, *co-u*(*e*)*ntio* (which finally sank to *contio*, like *noui-uentius* to *nuntius*), in *bi-*(*ge*)*nae*, *mali-g*(*e*)*nus*, and numerous others. The loss of *i* is commoner still; e.g. *au*(*i*)*-spex*, *nau*(*i*)*fragus*, *un*(*i*)*-decim*, *sinciput* for *semi-caput*, *officina* for *opi-ficina*, *pau*(*ci*)*-per*, *sti*(*pi*)*-pendium* and others; in the second part of the compounds, as *su-r*(*i*)*go*, *co-*(*i*)*mo*, *sur-*(*ri*)*pui*, *re-pos*(*i*)*-tus* &c., *iur*(*i*)*gium*, *prae-*(*i*)*tor*, *indu-*(*i*)*tiae*, *iubeo* perhaps for *ius-hibeo*, &c.

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[1] See, however, Roby, *Grammar*, p. 198.

[2] For a fuller list of examples, see Corssen, II. 573—587.

Are these lost vowels those of the unaccented syllables?

What is the immediate cause of this vowel-loss? We know that the general cause is the general principle of all phonetic change. But why did these particular syllables suffer to such an extent, while others in the same word get off scot free? Corssen replies that the cause must be the accent. The syllable which lost the vowel must have been the unaccented syllable. Then how far is this *à priori* decision confirmed by the facts of the Latin language? In order to clear up this point Corssen has instituted an elaborate inquiry into the laws of the Latin accent[1]. I have already said that these results did not seem to me to be as certain as those of the earlier portions of his book: since however they are at least probable, and if true have an important bearing on this part of our subject, I will give them here very briefly.

Corssen believes that there was an older and a younger law of accentuation in Italy, as well as in Greece. For the latter law he has the good authority of Priscian and Servius. The former rests on a large number of particular forms in both languages, which will not fit in with the law in use at the flourishing period of their respective literatures: I will describe the younger law first, as being certain; and then state the main points in which Corssen's assumed earlier law differs from it.

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[1] II. 794—947.

Common law of accentuation.

By the rule then of the Roman literary period we find,

	Circumflexed.	Acute.
1. *Monosyllables.*		
vowel long by nature.	rês fôns sôl flês	
...... short[1]		mél cór fáx nóx
2. *Dissyllables.*		
last vowel long.		Rómae népos
.... short, and first short.		árma déus
.... long.	Rôma dônum	
3. *Trisyllables, or more.*		
penult short.		áscia póstulas
.........long (position).		puélla tegéntes
.... (nature), and last long.		pudícae audísses
.... short.	lectîca ciuîlis	

The circumflex or "broken high tone," as Corssen calls it, was not the same tone throughout: prima erecta rursus in grauem flectitur, as Servius defines it. And this sinking of the tone is doubtless the reason why it is never found separated from the end of the word by more than one short syllable. Its natural place therefore would seem to be at the very end. Yet so little was the Latin inclined to accentuate the last syllable, that the circumflex is never found upon it in dissyllables, except when the original last syllable has been wholly or partially lost, as in *illîc(e)*, *credôn(e)*, and the similar *nostrâ(ti)s*, *audî(ui)t*.

Loss therefore may be expected in unaccentuated syllables: that is, on all *original* final syllables (which, as we shall presently see, did suffer most severely); in the syllable immediately *before* the accented syllable (and we have already seen the loss of the vowel in many such; in *c(a)larus, c(a)lamor, text(o)rina, pist(o)rina, discip(u)lina, lib(e)rare, fab(e)rica, pat(e)ronus, cer(e)ritus, cal(i)care, pur(i)gare, teg(i)mentum,* or at least in the simpler forms from which these are derived); and in the penultima when *following* the accent (as we saw in *pal(a)ma, uinc(u)lum, peric(u)lum, lib(e)ri, ded(e)rot, no(ue)ram, quaes(i)tor, uol(i)tis,* &c.). In longer words, generally either derivatives or compounds, there seems to have been a middle tone; in compounds on that part which lost its original accent, i.e. the first, e.g. *ue̍rsi-péllis, ci̍rcum-sísto,* because the significance of the first member did not allow it to sink to a grave accent: but in derivatives it is certainly the most important part which suffers, as *i̍ra-cúndus, lo̍ngi-túdo.* Some excessively long compounds might even have two middle tones, as *qui̍na-ui̍cenária, ue̍rbi-ue̍litátio.*

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[1] That is *naturally* short, and lengthened (for prosody) only by position. Natural length is either radical, as in *stāre;* or the result of vowel-intensification, as *dūcit*, or of contraction, as *amās*. Mere length by position, in words like *nox*, *arma*, &c. must be distinguished from this.

Accent depends on the quantity of the penultima.

The main result given by these facts is this: the accent was dependent on the quantity of the penultima: it was even fixed to its place by the length or shortness of the penultima. Thus the accentuation of the Latin was far more stiff than that of the Greek. It is true that in Greek (at least in accordance with the rule observed in the age of literary activity) the accent could not stand farther back than the antepenultima. But within that limit it was free to range. As Corssen admirably puts it: "the quantity limits the accent as to where it shall not stand; not as to where it shall stand." It could and often did stand on the last syllable. In Latin it could not: and without doubt the monotonous weakening of this last syllable is closely connected with this comparative stiffness of the Latin accentuation.

Reaction of accent upon quantity.

But though the quantity thus reigned over the accent in Latin, yet it was not unaffected by it in its turn. The accent could shorten syllables and even cause their entire loss. It could shorten grave (i.e. unaccented) vowels, whether final or not: for example, *pútŏ, mŏléstus, ŏfella.* It could abolish the final syllable, as in *díc*(*e*), *áger*(*os*), *fácul*(*is*), and many others, which will presently appear in their order[1]. Thus though "the quantity could bind and 'break' the accent" (i.e. in the circumflex), "the accent limited and shortened the quantity. It was a conflict of inherent powers within the word[2]." But while the influence of the accent was but sporadic—acting in a few words like those above mentioned—the influence of the quantity was regular. Therefore in the prime of Latin literature the quantity ruled the accent in the main. But the inevitable tendency of the accent to win the day at last, was only checked, in no way beaten back, by the Augustan rules. How supreme it had become by the beginning of the fifth century after Christ, is to be seen by a glance at the inscriptions of that time. We find, for example, these lines at the beginning of a pathetic epitaph of that date: it marked the grave of a little girl, called *Felicity*:—

> Quod dulcis nati, quod cara pignora praestant,
> Continet hic tumulus, membra qui parva retentat.
> Dolorem sine fine dedit Felicitas isto,
> Clauditur infelix falso cognomine dicta[3], &c.

The first three lines all contain "false quantities:" the last happens to be correct by the Virgilian standard; and at first sight we set down the whole epitaph as full of barbarous errors. But this is wrong: the epitaph is right enough in the main if judged by the principle on which it was written. The old hexameter-form is retained: but the beat of the first syllable in each foot, which is given by a long syllable in the old hexameter, can be given here by accent as well as by quantity. Six such beats are required, and nothing more: the syllables *in thesi* are unimportant; if short, when by the old rule they ought to be long (as *carā̆*), they can be left short; if long where they should have been short (as *felicitās*), they can if unaccented be shortened. That this is the general rule, in spite of exceptions (like *membrá*, above), will, I think, be clear to any one who looks at many of these epitaphs of the later period.

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[1] See Corssen's lists, II. 831. [2] *Ib.* II. 832.
[3] *Ib.* II. 396, ed. 1.

But in classical times, as we have seen, accent was in complete dependence on the quantity of the penultima: sometimes affecting other syllables, but not touching this one. How then are we to account for occasional weakenings like *uict(ō)rix*, &c.? Here accent and quantity ought to have agreed to preserve the *ō*; and yet it is absolutely lost.

Cases which contradict the common law, and can only be explained by an older different one.

To explain this and many other such difficulties Corssen assumes an older law of accentuation, differing from that in common use in two main points.

1. *The acute was not bound by the length of the penultima.* This will account for cases where a penultimate vowel, long by nature or position, on which by the later rule the accent must have fallen, has been either absolutely lost, as *crép(a)ui, víct(ō)rix, sú(buo)rsum, dédrot* (for *dédērunt*), *díx(is)ti*, &c., or shortened, as *fídĕi* (from *fidēis*), *íllĭus, hómĭnis, plátĕa, dócĕo, dédĭmus*, in all of which the penultima was once undoubtedly long. The same applies to compounds, like *cógnĭtus, péiĕro*, &c.; and to the manifold cases where the quality of the vowel is weakened though the original quantity is retained, as in *ánhēlo, ínquīro, áccūso;* or in *cóndemno, ínermis*, where the vowel is long by position. All these cases can be explained by supposing the accent to have fallen originally on the antepenultima, despite the length of the penultima—hardly in any other way.

2. *The accent might fall even on the fourth syllable from the end.* This possibility will account for cases where the antepenultima has fallen out, though by the usual law it ought to have been the accent: e.g. in *iúr(i)gium, gáu(i)deo, puér(i)tia, póp(u)licus, súr(ri)puit, dé(hi)beo, rét(e)-*

tulit, and countless others[1]. Another effect was the loss of the final vowel or syllable, as *ánimal*(*e*), *frúgifer*(*os*), *ópifex*, i.e. *ópific*(*i*)*s*. Sometimes we see side by side the results of this method, and those of the later rule, long after that one had become general: e.g. *ánimae* besides *animái* from *animāis*, *déderĭmus* by *dederīmus*: so also in trisyllables *dédĕrunt* by *dedērunt*. Such double forms shew the length of the contest: in which the later method was doubtless assisted by the new acquaintance with Greek laws of accentuation: but which certainly dated from an earlier time, as is shewn by the numerous syncopated forms in Plautus, and seems even to have been as old as the XII. Tables.

Accentuation in other languages.

I have already mentioned that Corssen holds a similar older law of accentuation to have existed in Greece as well as in Italy. Such an agreement would materially increase the probability in either case; for we should regard this older freer state as that of the Graeco-Italian time, and should conclude that each nation developed out of this, after the separation, its own system of accentuation as of pronunciation[2]. And we should be confirmed in this belief by discovering that in Sanskrit the accent is absolutely free—is subject to no general law, but shews many traces of a battle between the radical syllable and those prefixed or suffixed, which modified it. The Sanskrit system has been left in a sufficiently simple form to enable us to say with certainty that the principle of it was this: that the accent should fall to that syllable which was felt to be most important. This is the mark of the freshest power of conception in a people: and is the principle which we may therefore with some certainty attribute to the Indo-Europeans. Of the other derived nations, the Greek stands nearest to the Sanskrit, by still keeping the power of emphasising change of idea expressed by suffixes; but it was bound by the rule that the accent could not stand farther back than the antepenultima. In Latin we see an additional loss of energy, in the weakness of its terminations, as well as the restraints which it shares with the Greek. The German family, in which the accent was unaffected by quantity, but always thrown back as far as possible in the word, shews the least living force of all.

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[1] See Corssen, II, 334.

[2] The evidence for an older system in Greece consists (1) of the reduplicated presents (see p. 191), like *μίμ(ε)νω*, where the accent ought by the later rule to have fallen on the last vowel; which would therefore not have been lost: (2) of nouns ending in *ως*, as *δύσερως*, *ἄστεως*, &c., where the *ω* must have been long, while it is not probable that the vowel of the penultima was always mute; at least it is often scanned as a full short: (3) of the words ending in *αι* and *οι* which are accented on the antepenultima; these cannot really have been long in quantity and at the same time short for accent: (4) of some feminines like *εὔπνο*(Ϝ)*ια*, *ἀλήθε*(*σ*)*ια*, &c.; in them the final *α* was doubtless long originally, and it is inconceivable that the accent should have been thrown back if the long final had always power over it; neither is it probable that the *α* was first shortened and then the accent thrown back, for there seems no other reason for the shortening of the *α*, except the distance of the accent; at all events, in words like *ἱερεία* (sacrifice), *δουλεία*, where the accent seems to have been always on the penultimate, the final *α* was never shortened. The possibility of the accent being farther back than the antepenultima, is shewn by syncopated words like *βέβ*(*α*)*ληται*, *ἤλ*(*υ*)*θομεν*, *ἐγίγ*(*ε*)*νετο*, &c. Here it would certainly seem that the accent on the first syllable must have been the cause of throwing out the vowels from the radical syllable, which ought moreover to have been accented. These indications clearly

Such, briefly stated, are Corssen's views about accent, so far as I understand them. His theory is certainly arbitrary; and many of the instances on which he relies to prove it, may be susceptible of a different explanation. But as it seems to me both possible and plausible, and as I know of no other equally good, I have thought it right to give it here.

Middle stage in Latin between a vowel fully sounded and entirely lost.

It is not probable that the vowels thus lost fell out abruptly, with no intermediate step. Before a short vowel finally vanished it commonly passed through a stage in which it was scarcely heard though still written, retained

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do not amount to proof: but they at least give us some reason for believing it probable that at an earlier period the Greek accentuation was more free than afterwards.

It may be observed, that the accent in Greek words seems even to have had the power of lengthening short syllables, when many came together: e. g. *σοφώτερος*, *εὐώνυμος*, &c. If the older law be allowed, we might explain similarly forms like *διιπετέος* (*Od.* IV. 477). In *τανηλεγής*, *νεηγενής*, &c. the vowel is also changed; so too in *ὑπερήφανος*, from *ὑπερί* (*ὑπείρ*). See Curtius, *Erl.* 131 and 166.

without possessing any definite quantity, and liable therefore to be pronounced more or less distinctly according to chance of position. Such vowels accordingly had not the full length of a short vowel, for scanning, and therefore could be ignored at the pleasure of the writer, whether they occur in enclitics, as *ĭpse*, *ĕst*, *quĭdem*, &c., or in the grave syllable of accented words, as *vŏlúptas*, *mánŭ*, *bénĕ*, &c. Further, such a vowel could be disregarded even before two consonants, as *senĕctúti*[1], *ferĕntárium*, &c.[2]; also, when a word ended with a consonant which was weakly sounded, such as *m*, *n*, *s*, *t*, *d*, and the next word began with a consonant, the vowel before the final consonant if weak itself was not lengthened by "position." These facts are conclusively proved by Corssen, by numerous examples[3] from the Latin dramatists, who give us the best evidence of the common pronunciation of the day: to these vanishing vowels he gives the name "irrational." This then is the cause of the apparent irregularities in the lines of Plautus and Terence; which are regular enough if we do not apply the standard of Greek metre to them. In these writers such vowels (following the analogy of the spoken language) are *dumb* although written. But this license was impossible in the regular metrical system of the Augustan poets. They could not brook these syllables which were neither alive nor dead. For them every vowel must be a full long, or a full short, or cease to exist altogether: they could not make up one short syllable out of two or three half-heard ones. Consequently they either struck out the lingering vowel-sound altogether, as in *dextra*, or raised it to a full short, as *dextera;* they could not leave it ambiguous as *dextĕra,* where the vowel was heard indeed, but did not take up the time of a full short. It was no doubt especially the introduction into Rome of the dactylic metre, which favoured short syllables, that stopped in written Latin the ever-increasing vowel corruption, and fixed the vocalism at that point which it had reached at Cicero's time. But the spoken Latin was being further corrupted none the less: its downward path must be traced through the vernaculars and into the Romance dialects.

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[1] Plaut. *Trin.* 398.

[2] *Id.* 456.

[3] II. 608—669. For a long list of similar examples, see the excellent edition of the *Trinummus*, by Brix, Intr. p. 16.

The short vowel before doubled consonants in Plautus, e. g. *simĭllimae*, *Philĭppum*, is not parallel. These are to be explained by the well-known fact that the double consonant was not *written* before the days of Attius, and therefore the sound wavered between a long and a short, but was probably always distinctly heard. So also in words like *ŭxor*, *senĕx*, *Alĕxander* the reason of the apparently irregular shortening is, that *x* did not *sound* much more than *s*.

This explanation of the extensive corruption and loss of vowels in the Latin—that it was caused by the vowel gradually dying out of unaccented syllables—seems to me by far the most probable. It is given, as I have already said, by Corssen; it is also now maintained by Ritschl[1], though a different view was taken by him in the Prolegomena to the *Trinummus;* by Dr Wagner in the admirable Introduction to his edition of the *Aulularia,* the first attempt with which I am acquainted to make known in England the process and results of etymological research in Germany; and by Prof. Munro, in a review of Dr Wagner's book[2]. The opposite view was formerly held by Ritschl, that the words were compressed in the utterance, e.g. that *manus* was sounded as *mnus* (not as *manŭs,* with the last syllable "dumb"); similarly that we should pronounce *snex, sror* for *senex, soror,* &c.[3] This theory is often supported by instances like *père, mère,* &c. in French, where the *t* is supposed to have fallen out through this compression of the total sound[4]. But the reference to French to prove the pronunciation of Latin, seems to me just as deceptive as to argue from modern to ancient

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[1] See *Rheinisches Museum,* XIV. 400.

[2] *Camb. Univ. Gazette,* April 28, 1869.

[3] In the first edition of this work I wrongly attributed this view to Prof. Key. He writes: "In my 'Comments' on a pamphlet by Dr Donaldson (then Mr D.) published in 1845, I expressed my *dissent* from Bentley's doctrine (ad. Ter. Eun. 2, 3, 66) that *senex* should be read as *s'nex*". I owe Prof. Key an apology for this error.

[4] It is, I think, more truly explained by Wagner (*Aul.* Introd. p. xxxiv. note) as having been assimilated to the *r.*

Greek. This theory is much less adapted than Corssen's to the genius of the Latin language, which, as we have seen already in part, and shall now see more fully, produces above all things corruption of the *last* syllable.

Loss in and of the final syllable arising from its never being accented.

For I come now to the loss of the final syllable, both when the vowel itself ends the word, and when it is followed by an imperfectly sounded consonant, which was lost either before, or with the vowel: as the principle is the same in both cases, they may be considered both together. I thought it better to defer these until I had stated a probable reason for them, because the examples are mostly familiar, but may now be all referred to one principle. Often where the vowel is not absolutely lost, it has suffered loss of quantity from the same general cause; I must therefore for the sake of completeness briefly consider this loss also, though I have not now time to enter fully into the history of Latin prosody; a good account of which (so far as Plautus at least is concerned) will be found in Wagner's *Aulularia*, and Brix's *Trinummus*.

Loss in quantity.

The loss in quantity as the slighter loss will naturally come first: and here let us first look at those cases where the vowel of the last syllable has been shortened, although the final consonant was not lost, but probably indistinctly pronounced—a point which will come under our notice when we treat of consonantal change. Thus, *ā, ē, ī* were long in the verbal bases *amā, monē, audī*, and as they are still found long in the second person *amās*, &c. were no doubt once always long in the third also, *amāt*, &c. Yet instances are hardly to be found of the vowel occurring long, even in Plautus[1]: on the contrary, the syllable is commonly short: though oddly enough there are several instances of *ā* in the imperfect, even in classical Latin; where the unusual length is generally explained by the editors as simply the result of arsis: I have already said that "metrical license" is most foreign to the spirit of the

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[1] Corssen quotes *Merc.* 648, 'Quid istuc captas consilium? Quia enim me adflictāt amor.'

Augustan poetry: and we should never have found e.g. *amittebāt*[1] if the old long-sound of the *ā* had not been sometimes heard in the speech of the day. Examples of the vowel being still long in the present in the Augustan age are *arāt*[2], *ridēt*[3], *uidēt*[4]. For the subjunctive we have *fuāt, augeāt,* &c. in Plautus and Terence; the *ā* being afterwards shortened by the general tendency to weaken the final syllable. Similarly Horace has *perirēt*[5]. Curiously even the *i* in the third conjugation is found long in *figīt*[6], and *facīt*[7] and others. Wagner compares the Greek e.g. λέγει[8]; and therefore, I suppose, regards the lengthening as compensatory: but it may be on a mistaken analogy. The perfect has its third person long more frequently, as *astitīt*[9], &c., and compare the end of one line of the epitaph of Scipio, "hic fuīt apud uos." In the second person of the subjunctive perfect, the *i* seems hardly more short than long in the Augustan age. Examples of the long *a* in the present are *loquār, opprimār*[10], &c. Passing from verbs to nouns, we see in Plautus the final still long of *sorōr, stultiōr*[11], &c.; though the *o* is elsewhere short in *soror* and similar words, as might be inferred from the process of weakening which gradually reduced the full long vowel to something less than a short. Hannibāl was still long with Ennius, as Corssen suggests[12], because the name was derived from the Phoenician Baal, and was naturally long, and afterwards shortened by the prevailing

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[1] *Aen.* v. 853.

[2] Hor. *Od.* III. 12, 26.

[3] *Id.* II. 4, 14.

[4] *Aen.* I. 308.—Prof. Munro, in a note to Lucr. II. 27, denies that there is any analogy between *fulgēt* there (and similar long forms in Virgil) and the lengthening of such syllables in Ennius. But at all events Virgil would not have lengthened such a syllable if it had not been long in Ennius; there is at least so much analogy: and if my principle be correct, the vowel cannot have been wholly short in the common speech even of Virgil's day; or he would not have used it as long. That such long syllables are only found in arsis in Virgil, and not in thesis as in Ennius, is natural enough, for no doubt the tendency to shorten the final syllable, when not emphasised, had increased greatly between the days of Ennius and Virgil.

[5] *Od.* III. 5. 17.

[6] Hor. *Od.* III. 24. 5.

[7] Virg. *Ecl.* VII. 23.

[8] *Introd.* p. XIX.

[9] Plaut. *Mil.* 213.

[10] Plaut. *Amph.* 559, and 1056.

[11] *Poen.* I. 2. 151. *Bacch.* 123.

[12] I. 366.

Latin tendency. Lastly, *-būs* (originally *-bhyas*) in the dative plural is long in Plautus[1]: and rarely in Virgil[2].

Loss of quantity when the final consonant was lost.

When the final consonant was not merely weakly sounded but absolutely lost, the tendency to shorten the preceding vowel was still stronger. The vowel remained unguarded, to suffer the wear and tear of use, and was affected in the same way as originally final letters. Here, as in the cases mentioned above, vowels which were generally long in the days of Plautus and his cotemporaries were shortened in the common speech in the last century before Christ—so much so, that they were generally scanned as such by Virgil and Horace, though the older quantity occasionally still appears in their times, breaking the regularity of the Greek metres they employed. Some words retained their concluding vowel long to a late period. When the *d* of the ablative was lost, final *a* none the less retained its length till the times of the later Empire. One exception is *ită*, which is long in Naevius' well-known line,

> Itāque postquamst Orci traditus thensauro.

But final *ē* commonly sank to *ĕ*, as *patrĕ;* though we have on Scipio's tomb,

> Gnaiuod patrē prognatus, fortis uir sapiensque.

Traces are found of a middle form *ei*, as in Ennius' line;

> Tum caua sub montei late specus intus patebat.

Long *e* was retained in *mē* and *tē* from *mēd* and *tēd*: whilst the ablative of the third pronoun kept the *d* but shortened the vowel, and appeared as *sĕd*, literally "by itself:" its original length is shewn in compounds like *sēd-itio*. Adverbs in *-e*, originally ablatives in *-ed*, generally remained long, except short words in common use, as *bene*, *male*, and a few trisyllables, where the accent fell on the penultima, as *inférne*[3], *supérne*. Similarly *quĕ* was originally *quīd*, then *quī*, *quē* (by the tendency mentioned above to change a final vowel into *e*) and *quĕ*[1]: the form *quī* is found frequently in the comic writers with a transitional sense in exclamations[2]: and compare the long *i* in *quintīdie*, *postrīdie*, &c. Then *modō*, whilst still used as the ablative of *modus*, is shortened by Plautus[3]: so also *cito* and *ergo*, adverbs, though the latter is not commonly shortened till the Silver age, when numerous examples of final *o* shortened are found[4], which would have been inadmissible in classical Latin, but which were daily growing more numerous in common speech in the days of the classical poets. In fact the Augustan authors used the short final *o* only in words which had been so completely worn down by common use that no feeling of their old length remained, such as *citŏ*, *modŏ*, *homŏ* and *egŏ*, shortened from *homōn* and *egōn*, A huge list of words ending in *ŏ*, which are found in Juvenal and Martial—who no doubt reflect the common pronunciation of the day—is given by Corssen, from whom indeed nearly all the examples I have quoted above are taken[5].

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[1] E.g. *Aul.* 376.

[2] E.g. in *Aen.* IV. 64.

[3] *Lucr.* VI. 597.

Loss of quantity in originally final vowels.

Next, the loss in Latin terminations is to be seen in the shortening of originally final vowels. Thus the *ā* of the feminine nominative was early shortened, leaving but few traces of itself in Ennius and Plautus[6]; and sometimes certainly in inscriptions, as in the grand line on the tomb of the young L. Cornelius Scipio[1],

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[1] The correspondence in meaning with the vulgar English "which" is comical. When Virgil said "Arma uirumque cano," "arms I sing, which I sing the man," he was unconsciously using the exact idiom of Mrs Gamp and P'leaceman X. The originative power of language is limited after all.

In the first edition I said that the lengthening of *quĕ* in Virgil was due to the original length being retained in the consciousness of language. I now am convinced by Prof. Munro's arguments (on *Latin Prosody*, in *Public School Latin Grammar*, p. 460) that here at least Virgil was merely copying the Homeric lengthening of τε: he points out that in fifteen out of the sixteen cases where it occurs it is in the arsis of the second foot, e.g. *liminaquē laurusque Dei:* in the other case it is in the arsis of the fifth, *Noemonaquē Prytanimque;* and it is always the first of two consecutive *que's*.

[2] E.g. *Trin.* 464; see Brix's note.

[3] *Aul.* 589. See Wagner's *Introduction*, p. xxii.

[4] E.g. in Juvenal, *ponŏ* (VII. 93), *uigilandŏ* (III. 232); and numerous others both in this author and in Martial.

[5] Corssen II. 486.

[6] *As.* 762 *epistulā:* *Bacch.* 255, "Volcanus, Sol, Lunā, Dies, Di

> Quoiei uitā defecit, non honos, honore.

In locatives we find *ĭ* in *domĭ*[2], and others in Plautus: *mihi*, &c. could have the final vowel short or long down to the Augustan age; compare *nisi* and *quasi*. Imperative dissyllables early shortened the last vowel, as was but natural, to the brevity of command; *rogă, iubĕ, manĕ*, &c. are frequent in Plautus: also other (not imperative) forms, as *darĭ, dedĭ*, because of their shortness and frequency: *o* also in the first person is short in *eŏ* and *volŏ*—dissyllables again, and found in Plautus, but in the Silver age the tendency had affected longer verbs as well.

Loss of letters in the final syllable.

We now come lastly to the absolute loss of the vowel, either when it stands actually last, or when it is followed only by a weakly-sounded consonant, that is, practically, by none at all—the result, like the loss of quantity already considered, of the tendency in Latin to throw back the accent as far as possible from the end of the word, subject to the rule of the length of the penultima. First under this head comes the loss of original *o*, or later *u*, in the nominatives, such as *ager(os), puer(os)*, &c., a numerous class; as *famul* for *famul(os)* used by Lucretius[3] after Ennius,

> Ossa dedit terrae proin ac famul infimus esset.

It is not easy to determine in these cases whether the vowel or the *s* went first: we should rather have expected the *s*: but there are no traces of the vowel surviving: on the contrary, *s* is found alone in words like *Campans*[4], but this seems almost unique. But the vowel *i* has certainly fallen out and left the *s* in nouns like *Arpina(ti)s*, where the *t* after the loss of the vowel would seem to have

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quattuor:" unless we follow Fleckeisen and transpose Sol and Luna, for which there seems no occasion.

[1] Mommsen, *Corpus*, n. 34.

[2] *Mil.* 194.

[3] III. 1035.

[4] Plaut. *Trin.* 545, quoted by Corssen, II. 591.

assimilated itself to the *s*; so in *men*(*ti*)*s*, *fron*(*di*)*s*, and very many others: in *orb*(*i*)*s*, &c. where the preceding consonant is not a dental, it keeps its place unchanged. Where a liquid precedes, the liquid maintains its ground, and the *s* is lost, e.g. *uigil*(*is*), *uomer*(*is*), *pedester*(*is*), and very many others; where however the accent falling on the antepenultima sometimes drove out the *e* of the next syllable, and produced the other form, as *pedestris*. The same principle seems to have produced out of *uelis* (i.e. *si uelis*) the conjunctive *uel*[1].

I followed by no consonant fell away regularly in neuter nominatives, such as *animal*(*i*), *lacunar*(*i*), *cochlear*(*i*), *piper*(*i*), *lac*(*ti*): though Corssen mentions forms in *-e*, as *lacunare*, existing side by side with these, as was quite natural; he quotes *sale* (i.e. *sal*) from Ennius. Similarly in many adverbs the *i* has been lost, as *tot*(*i*), *ut*(*i*), *post*(*i*), &c. For *tot* and *quot* Corssen compares the Sanskrit *tati* and *kati*, and calls *ti* a "demonstrative particle:" but *tati* seems to be rather an old locative form produced by adding *i* to the pronominal base *tat*. The *i* was lost in very old times from the verbal terminations, as *regis*(*i*), *regit*(*i*), *regont*(*i*); also from *regebām*(*i*).

E was lost in imperatives of the third or old conjugation, just as *ā* and *ē* were shortened in the first and second: e.g. in *dic*(*e*), *fac*(*e*): but the full forms are common in Plautus: this loss therefore was a late one. Many little words in common use have lost their final *e*, as *neu*(*e*), originally *ne uelis*, *hic*(*e*), &c.; *nec* (i.e. *nequī* or *nequĕ*), *qui-n*(*e*), *si-n*(*e*), &c. The fuller forms, *hice*, *hae-ce*, the nom. plur. *hisce*, &c. are sometimes still to be seen in Plautus. This *e*, which was in these cases weakened from *i*, must have been so slight a sound, and so little inconvenient at the end of a word, that it is lost less frequently than we might have expected.

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[1] Corssen, II. 60, ed. 1. Dr Wagner (*Academy*, July 11, 1870) prefers Prof. Key's explanation that *uel*=*uol*, an obsolete imperative. It seems to me that in *si-ue* and *ne-ue* the first part of the word suits better with the explanation given in the text.

CHAPTER VIII.

CONSONANTAL CHANGE.

Superiority of the Greek over the Latin thus far manifested.

In the last chapter I have mentioned, I think, the most important variations of the Greek and of the Latin vowel-system from that of their common Graeco-Italian ancestors, and from the simple vocalism of the earliest historic period of our race. We have seen in these variations the strength of the Greek and the weakness of the Italian. We have seen how the Greek could adhere in the main to the simple distinction of scales in the original vowel-system, and yet could avail itself with remarkable success of any expansion of that system. The Greek vocalism shews the greatest observance of rule, combined with the greatest individuality: and thus coincides with the highest development of Greek character to a surprising degree: and since the consonantal system shews the same principle, though developed in a less degree and in different ways, we are justified in believing that the character of a nation can be impressed on its language, so far as that language is the result of pure internal development, and has not been compounded of many foreign elements. The Italian, on the contrary, both confounded that distinction of the three main vowels which is essential for the clear expression of distinct radical ideas, and also subjected itself to a rule which kept ever increasing in stringency—the tendency to uniform monotonous weakening. So far then we have seen the Greek at its best, the Latin at its worst.

Greater strength of the Latin consonants.

Now we shall see the better side of the Latin compared with the Greek, shewn in its greater tenacity of consonantal sound. No doubt the Latin not unfrequently substituted a weaker for a stronger consonant, as well as the

Greek or indeed any other language: every language has its own peculiar weakenings of this kind; they are the most obvious marks of distinction between one language and another. But the greater strength of the Latin consonants is shewn in their comparative freedom from assimilation, which in many Greek verbs obscures the radical form. Thus in *φράσσω* we have the same root and the same suffix (*ya*) as in the Latin *farc-io:* but the *k* of the root is lost in Greek from the assimilating effect of the *y*, which in Latin was simply resolved into the cognate vowel, and exercised no power over the stronger consonant: indeed the *k* is hardly recoverable in Greek because it has regularly sunk to *γ*, as in *ἔ-φραγ-ον*; just as it sank to *bairg* in Gothic, that language which of all the Indo-European family comes nearest to the Greek in the richness of its vowel-system: the original *k* is to be discovered in the less spiritual Latin and Lithuanian. Generally speaking, however, the original form is recoverable in Greek from some of the tenses which are formed directly from the root: the Greeks felt too keenly the necessity of clearness to suffer the consonants to be absolutely obliterated; they are the necessary framework of language, the body which is needed for the soul; yet the soul may be vigorous though many bodily members are weak or even lost. It is curious too how the innate Greek love of symmetry is recognisable even in the weakenings of its consonants: they are nearly always regular, not often isolated: there is a system to be found in almost all of them: while the Latin looks uneven in the midst of its regularity; its loss especially of consonants in groups is arbitrary, and not reducible to rule: and even its less corrupted vowel forms have a more irregular appearance than those of the Greek. Nothing can look more regular than *ἕζομαι, στίζω, σχίζω, μύζω*, &c.; but this regularity leaves us quite uncertain whether the root ends in a guttural or a dental; while there is no such uncertainty about the very unsymmetrical forms which correspond to them in Latin, *sedeo, stinguo*, *scindo, mugio.* This will appear more clearly when we have seen the difference in the changes of the two languages.

I. SUBSTITUTION.

1. *Change of hard (unaspirated) letters to soft.*

Change of hards to softs—not very common.

This change is the simplest process of substitution. It is not very common in either language, and less so in Latin than in Greek: in both languages it is sporadic only, never affecting the whole, even of any class of words.

Change of K to γ and to g.

Thus κ passes into γ in ἀρήγω from √αρκ, which is unaltered in ἄρκιος. Perhaps the change may arise from the softening influence of the two vowels and of ρ. I have already mentioned the Greek ἔφραγον by the side of *farcio;* but the σσ of φράσσω shews that √φρακ must have been the original form; for we should have had φράζω from a √φραγ. Indeed the Latin has commonly preserved for us the original letter which the Greek has weakened. Thus in Greek we have πήγνυμι, and even in Latin *paciscor* and *pagus:* but *pac-iscor* shews that the oldest form of this common root, to fix—whence to build, or to covenant—was PAK, and not PAG, as we should have rather supposed from the frequency of the *g*; and πάσσαλος (i.e. πακ-*ya*-λο-ς) tells the same tale. Compare μίσγω and *misceo*[1].

In Latin *gloria* is from √*klu*, the Indo-European KRU; the first step is the noun *clouos* (compare κλέϜος), which with the suffix *ya* becomes the secondary noun *clouosia;* and this, by the loss of *u* and the change of *s* to *r*, is *cloria;* after which the *l* is probably responsible for the *g*, and the change therefore is rather one of assimilation[2]. But there is simple substitution in *viginti* by the side of

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[1] A full list of all the gutturals thus changed in Greek is given in the *Gr. Et.* 485—487.

[2] See *Krit. Beitr.* 53.

Ϝίκατι (Attic εἴκοσι), and *guberno* (κυβερνάω); whilst the variation within the Latin itself is seen in *gurgulio* by the Plautine *curculio*[1]. The older *k* is pointed out by Corssen (l. c.) as often found in the Old Umbrian, where the Latin had weakened it.

Peculiar change of the hard guttural in Latin.

But this change of sound in Latin is, doubtless, connected with a curious and well-ascertained fact in the history of the Latin alphabet. The Old Latin alphabet had like the Greek, K for the hard guttural, C or ∠ (Greek Γ) for the soft. But the difference between the two sounds was nearly lost at some early period, and consequently K fell out of use: it was only retained occasionally before *a,* though it was regularly kept as the abbreviated form of some words, as *K*(*aeso*), *K*(*alendae*), &c.: whilst C, not G, is found in old inscriptions in forms like *macister*, *cnata*, &c.; *leciones* stands on the restored Columna Rostrata: C. and Cn. were used till quite late for Gaius and Gnaeus. In fact, the *k*-sound was lost for a time, and *k* and *g* alike were represented by *c*, that is, by the *g*-sound. But at a later date, some time in the third century B.C., the distinction of sound begins to reappear, as Corssen suggests very probably[2], from the increasing intercourse of Rome with foreign peoples, especially the Greeks of southern Italy. But instead of replacing K for the hard guttural sound, the Romans kept the existing symbol C for the hard sound, and then slightly modified it by the small line in G to denote the soft sound[3]. That the rather frequent change from *k* to *g* in Latin is due in great measure to their confusion, seems to me probable, from the fact that for the other classes there is less corresponding weakening; to which indeed the Latin had no great leaning. The change of K or C into QV will be considered in the next chapter; also its weakening under some particular circumstances into a palatal sound like *ch*, which arises from assimilation.

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[1] Corssen, I. 77.

[2] I. 10.

[3] The earliest place where G certainly occurs seems to be the tombstone of Scipio Barbatus, about 200 B.C. Corssen, *Ib.*

Change of T to δ and d.

The hard dental passes into the soft much more rarely, even in Greek. We find *δάπις*[1], which seems to be the same as *τάπ-ης*. It is at least probable that the curious word *νέποδες*[2] is the same as *nepōtes*, the shortening of the *o* being due partly to the accent, partly to the confusion by the grammarians with *πόδες*: whereas Curtius rightly, I think, derives both from the root NAP, whence come so many words denoting relationship: *ἀνέψ-ιος*, "a cousin," the Sanskrit *naptar*, "a grandson," the Norse *nefi*, "a brother," and our "nephew;" a rather remarkable list of different "specialisations" in different languages. That the groups *πτ* and *κτ* have sunk to *βδ* and *γδ* in *ἕβδομος* and *ὄγδοος* from *ἑπτὰ* and *ὀκτὼ* seems equally undeniable and difficult to explain[3].

In Latin it is probable (as Corssen asserts[4]) that there is no instance of *t* sinking to *d* at the beginning of a word or between two vowels; that is, of regular substitution. The confusion between *t* and *d* at the end of a word (shewn in the different spellings of the best MSS., *aput* and *apud*, *haut* and *haud*, *set* and *sed*, &c.) belongs rather to the universal weakness of Latin terminations. The rule that the prepositions ended in *d*, and the conjunctions in *t*, seems to rest neither on etymological grounds nor on the actual inscriptions[5]; rather the final letter of these words, which were enclitic and fell constantly under one accent with the following word, was assimilated by the initial letter. Assimilation is the cause of *quattuor* turning into *quadraginta*: the numerals both in Latin and Greek constantly shew us odd variations of sound, so that their identification must sometimes depend, as it may safely here, on sameness of meaning.

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[1] Arist. *Vesp*. 676.

[2] *Od*. IV. 404. Theok. XVII. 25. See *Gr. Et*. No. 342 and p. 489.

[3] Curtius (*Gr. Et*. 488) thinks that *ο* in *ἕβδομος* was irrational, and that the *μ* assimilated the *τ*, and that in time the *π*.

[4] *Krit. Beitr*. 83 *et seq*.

[5] Corssen, I. 191, &c.

Change of P to β and b.

For the change from π to β Curtius gives about a dozen more or less certain examples, of which perhaps the best are ὕβρις, which seems to be derived from ὑπέρ, and καλυβή, compared with καλύπτω[1]; compare Latin *clupeus;* the π may be the mark of a secondary root KALP from √KAL: ἀβ-ρός and ἁπ-αλός are probably akin: and since there is no reason for hardening in στιλπ-νός, it is most likely that the β in στίλβω is a weakened π.

There are rather more examples in the Latin. *Bibo* is certainly a weakened reduplicated form of PA, "to drink:" the Greek has preserved the consonant but weakened the vowel to ι. *Scabillum* too may be compared with √σκαπ in σκῆπ-τρον, &c. and *glaber* with γλαφυρός[2]. This weakening however is especially remarkable in words borrowed at an early date from the Greek, as *Burrus* for Πύρρος, *carbasus* for κάρπασος. At a later period *p* is not changed in words similarly borrowed: and this weakening of *p* into *b*, in connection with that of *k* to *g* mentioned above, may perhaps shew, as Corssen suggests, that the Romans just before their more extended intercourse with foreign nations had not a good ear for the distinction between hard and soft momentary sounds: a distinction which under Greek influence they afterwards recovered.

2. *Further substitution for momentary (unaspirated) sounds.*

Change of D to l in Latin.

Such substitution seems to be confined to one or two cases in Latin. In Greek there is no further change of these letters which does not seem to belong rather to assimilation than to simple substitution. In Latin the only letter which is much affected is *d*. This sometimes passes into *l* and *r*. The first change takes place commonly at the beginning of a word: thus *leuir* = the Greek δαήρ, and the originality of the *d* is shewn by the Sanskrit *dēvar*. That *lingua* was originally *dingua* is probable from the Gothic *tuggô*, our "tongue." And *dacrima* as the older form of *lacrima* (corresponding to *δάκρυ*, and Gothic *tagr*, a "tear") was used by Livius Andronicus, according to Festus, and probably, as Bergk suggests, by Ennius in his famous lines:

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[1] *Gr. Et.* 489, &c.

[2] Corssen, I. 128.

> nemo me dacrumis decoret neque funera fletu
> faxit. Cur? uolito uiuos per ora uirom.

The argument from alliteration seems irresistible. It is possible that *lignum* may be from a root DAGH, to burn, in Sanskrit *√dah:* the change from *a* to *i* before gutturals is rather common in Latin; compare *ignis, tignum*, &c. There are some rare but undoubted examples of the same change between two vowels: as *olere, ol(e)facere*, &c. from *√od*, which is found in *odor* and in *ὄδωδα*. *Ulysses* of course represents Ὀδυσσεύς. If *adeps* be the equivalent of *ἄλειφα*, we have the reverse change of *l* to *d*: in *cadamitas* and *calamitas* it is not clear which is the older form. Corssen explains the change by saying that the tip of the tongue is in motion in sounding *l*, and also in sounding the dental *d*[1]; but this first statement is scarcely true. A very weak *l* may be produced by pressing the tip of the tongue even against the teeth, instead of the front palate as is usual: this is a thick sound and borders closely on *th*. Now if the Italian *d* were the true dental, the sound into which it passed was probably this *l*; which must then have differed from the common *l* sound. But it is more likely that the *d* was produced as with us; and therefore the *l* was also the common sound: for each the point of the tongue was pressed against the same point of the palate, and the transition was therefore easy. Nearly the same reason would explain the other change of *d* into *r*: which is not at all uncommon in old Latin, e.g. in Cato's book on agriculture; and *arfuerunt, arfuisse, aruorsum*, for *adfuerunt*, &c. occur in the Decree concerning the Bacchanalia[2]. But in the classical Latin these

Change of D to r.

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[1] *Ausspr.* I. 223.

[2] Mommsen, *Corpus*, p. 43.

words again appear with the *d*, shewing that the change was only beginning to be felt at the commencement of the literary epoch, which checked it: only three words which are familiar to us shew the *r*: these are *arbiter* (but *adbitere*), *arcesso*, and *meridies* (root *madh*, as in Sanskrit *madhya* and *μέσσος*, i.e. *μεθ-yo-ς*: this *dh* would become *d* in Latin[1]). The *r* must have been in these cases identical with the English *r*, in which there is no perceptible trill: it has been already more than once pointed out that the general position of the mouth for *d*, *l*, and this *r* is the same: but they differ in the degree and nature of the closure. This *r* accordingly differed from the sound into which *s* so often passed, which will be described afterwards: this no doubt was a strong trill. An intermediate sound is perhaps to be found in Umbrian, where *d* was changed into a sound still more resembling *s*, which, expressed in Roman characters, appears as *rs*[2]. I consider these two changes then as entirely due to a weak pronunciation of *d*[3]: there is no need to suppose an assimilation by other sounds.

3. *Substitution for Spirants.*

I. Greek substitutes for the spirants.

This, as has been often said, is the change which has affected the Greek language more than any other. No other letters have had so many substitutes or been so regularly allowed to drop: and there can be no doubt that the peculiar liquidity of the Greek—its constant accumulation of vowels without a consonant[4]—is mainly due to the loss of these rather insignificant sounds. I shall consider their substitutes and their loss together, since the first pass naturally into the second, and cannot without inconvenience be taken separately.

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[1] See Quint. I. 6. 30.

[2] Aufrecht and Kirchhoff, *Umbr. Sprachdenkmäler*, I. 84; and Corssen, I. 238—241.

[3] See page 275.

[4] A tolerably striking example is *δηιόῳεν*, *Od.* IV. 226, which was once *δᾱσ-yo-oyo-yε-ντ*. Four spirants have been resolved or vanished.

CH. VIII.

(1) *Changes of Y in Greek.*
(*i*) *Y*=*ι*.

(1) No trace is left of the symbol *y* in the earliest known period of Greek history. Instead we find *ι* especially in the suffix *yo*, which forms so many both primary and secondary nouns in all the languages[1]. Thus, when added immediately to the root it produces numerous adjectives, *πάγιος* (*παγ-yo-*), and nouns, such as *υἱός* (*συ-yo-*)[2]; sometimes with the *ι* displaced, as *μοῖρα* (i.e. *μορ-ya*): added to bases it produces secondary nouns, such as *ἀνδρέ-ιο-ς*[3], where however the double sound commonly passed into a monophthong, and *εὐσέβεια* from *εὐσεβεσ-ya*: the feminine perfect participles, as *τετυφυῖα* for *τετυφοτ-ya*; and adjectives with the vowel again displaced, as *μέλαινα* for *μελαν-ya*, *τέρεινα* for *τερεν-ya*. The Sicilian Doric has *ιο* where the other dialects have *εο*, as *ἀργύριος*, *φοινίκιος*, &c. Another suffix of the same form occurs in many verbs; this takes the same form in Greek, namely *ιο* for *yo*, e.g. *ἰδίω*, and *καίω* for *κα*(Ϝ)*-yo*, *δαίω* for *δα-yo*; and many times the vowel is thrown back, as *αἴρω* = *ἀρ-yo*, *τείνω* = *τεν-yo*[4]. In the comparative suffix

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[1] See Schleicher, *Comp.* p. 388, &c.

[2] Mr Paley (note to *Iliad*, VII. 47) has "little doubt that the root of the word was *φεϜ*." But I do not know a single certain instance where initial *φ* followed by no consonant has been dropped in Greek; for *φημί* and *ἠμί*, *φάος* and *ἕως*, *φέριστος* and *ἄριστος* have not the slightest necessary connection: *φημί* and *φάος* have been already referred to √*φα* and √*φαϜ*: *ἠμί* surely must be connected with *a-io* and Sanskrit *âha*, so that the root would be AGH (*Gr. Et.* no. 611): *ἕως* has been already discussed: *φέριστος* is from BHAR: but *ἄριστος* can be perfectly explained by the root AR, see page 30. I know no other case where there is even a semblance of *φ* having been dropped. On the other hand, the loss of initial *s* is one of the commonest facts of the language. I therefore hold the derivation from SU possible as far as form goes, and probable from the cognate words in other languages, but not sufficiently supported by cognate words in Greek itself to be regarded as certain: the derivation from *φεϜ* I hold to be impossible. Mr Paley (in the review already quoted, see page 142) calls each a "speculative etymology," implying that there is no reason why one should be more right than the other.

The *ĕ* in Mr Paley's *φεϜ* seems to be supported only by the *ē* in *fenus*, *femina*, &c. But there is no appearance of any *ĕ* in Italian; and if the root of these words was BHU (as seems, on the whole, most probable; compare Oscan *fufans*, Umbrian *futu*, &c.), the *e* was due to vowel-intensification (*eu*), and its length is compensatory for the loss of the *u*.

[3] Theok. XXVIII. 10.

[4] These have been already fully discussed at page 49: see also Curtius, *Temp. und Modi*, 94.

(*yant*) the *y* has generally been lost by assimilation, as in *βράσσων* for *βραχ-yων*, but appears as *ι* in *ἡδίων* and *ἀμείνων* for *ἀμεν-yων*. In the suffix *aya* which, as I have already said, has given us the verbs in *-αω*, *-εω*, and *-οω*, the spirant is lost altogether. It appears as *ι* in the old Ionic genitive-suffix, as *ἵπποιο* for *ἵππο-σyο*. Next, original *y* = *ε*, though much less frequently. This appears in *κενεός*, the Epic and Doric form of *κεν-yο*, "empty," and similar forms *στερεός*, *ἀδελφεός*, *ἐτεός*, &c. In the verbs *κυρέω*, *κτυπέω*, &c. which stand by *κύρω* and *ἔκτυπον*, the *ε* probably stands for *y*, though the affix may have been *ε*(*y*)*ο*, (*aya*), and the *y* altogether lost. The suffix of the future, *syo*, was in Doric resolved into both *σιω* and *σεω*: the first is found in the severer Doric of Crete and Heraclea, e.g. *πραξίομεν*[1]; the second is seen in the contracted forms *πραξῶ* and *πραξοῦντι*[2]. Apparently *ε* stands for *y* in *εὖτε*, i.e. *yο-τε*, which more commonly lost the *y* altogether. At the beginning of a word *y* has remained as *h* in a few cases. These are the pronoun *ὅς* with its ablative *ὥς*[3]; the Homeric *ὑσμίνη*, where the root is certainly the same as the Sanskrit √*yudh* (the *θ* passing into *σ* before *μ*), *ἧπαρ*, Latin *iecur*, Sanskrit *yakrit*, and *ὑμεῖς*, where our "you" recalls the Sanskrit *yu-shmē;* and a few more[4]. Sometimes not even the rough breathing remains, as in the Aeolic *ὔμμες* and *ὄττι* in Sappho[5]. Lastly, the spirant was absolutely lost within a word, in Attic especially, as in *κενός*, &c.; in the simple future *-σω*, where there is no contraction as in the Doric to mark the loss: in genitives like *ἵππου* and (Doric and Aeolic) *ἵππω* for *ἵππο-ο*: in the contracted verbs universally: and in some Doric and Aeolic words where the Attic has *ι*, as *ποέω*[6], *χαλκέος*[7], and Aeolic forms as *Ἄλκαος*[8], *ἀλάθεα*[9]. Other

(*ii*) *Y* = *ε*.

(*iii*) *Y* = *the rough breathing.*

(*iv*) *Y is lost.*

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[1] Ahrens, II. 210.
[2] Id. 217.
[3] See p. 139.
[4] *Gr. Et.* 368, and Schleicher, *Comp.* 217.
[5] *Frag.* I. 15.
[6] As read in Theok. *e. g.* VIII. 18, &c. by Ahrens, from the best MS.
[7] Id. II. 36.
[8] Alc. *Frag.* 24 (9), in Ahrens, I. 245.
[9] Theok. XXIX. 1.

different forms as ζ or even δ, under which original *y* appears, are not substitutes, but the result of assimilation or indistinctness of pronunciation, and will be described in the final chapter.

Curtius suggests that this *y* must have had something of the guttural about it, as indeed we might have inferred from its being sounded quite at the back of the palate, and therefore nearer to the gutturals than to any other sound which the Greek possesses. He argues from the Epic and Doric futures[1], where the ξ seems to be produced by the assimilating force of the σ, *κλαγ(α)σγω, κλαγσῶ, κλακ-σῶ, κλαξῶ.*

(2) Changes of S.
(i) S=σ.

(2) Original *s* retains its place in Greek generally at the end of roots and words. Thus it generally occurs in √ἐς, √Fες, √ἡς, &c., except when the suffix which follows begins with a vowel or *μ*: as in *ἐστί, ἐσθής, ἧσται*, &c.; but ἐ(σ)ύς, ἑ(σ)-*ανό*-ς, *ἡμένος*, &c.: and indeed the cases, where a vowel follows as well as precedes the *σ*, are more common than the others where it does not. But at the end of a suffix it is regularly kept—in formative suffixes, as -*ες* and -*ος* (*σαφές, ἕδος*, &c.), and in case-suffixes, as -*ς* of the nominative, -*ος* of the genitive: indeed *ς* is one of the few letters which the Greek could endure at the end of a word. At the beginning of a word it is sometimes found, as in *σάος* (*σῶς*), *σιγή, σελήνη*, &c.; these are probably from SVIK (whence German *schweigen*) and SVAR (the Sanskrit √*svar*, and Latin *Sol*, compare *somnus* from √*svap*, &c.); and the *σ* seems to have been generally kept when another spirant had fallen out immediately after it; but it is only regularly retained when a hard consonant follows immediately, as *σκάζω, στορ-έννυμι, στα-τός*, &c.: because the cognate hard protects it from the customary passage into the rough breathing, though even here the *σ* is sometimes lost, as in *ταῦρος* and some others which will be given under the head of Loss in consonantal

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[1] *E.g.* κλαξῶ in Theok. VI. 32, where however Ahrens deserts his MS. (K) and reads κλᾳσῶ.

groups. Generally speaking too, *σ* standing at the beginning of a word was retained when its loss would have obscured the radical form too much: this will explain *σαός* mentioned above, which would have become identical with *ἇς* or *ὥς*. Next, the rough breathing is found regularly, as in *ἕδ-ος*, *ἕπω*, *ὕπνος*, *ὅς* (the pronoun of the third person, originally *sva*, not the relative *ya* which takes the same form in Greek); in all these the analogies of other languages shew that *σ* once began the word. The rough breathing of the Greek is sometimes due to a lost *σ*, which was not initial in the word: as *εἱστηκει* for *ἐ-σεστεκει*, through *ἑέστηκει*; perhaps also[1] *ἥμέιος* mentioned above for *ἠσμένος*, *ἠ῾μένος*: when the rough breathing had become regular in the forms where *σ* was dropped, it would pass over even to the few where it was retained, as *ἧσται*, though etymologically it was wrong there: certainly the same root *âs*, to sit, in Sanskrit has no initial sibilant[2]. With respect to *s* the Greek and Sanskrit usages are directly opposed. The Sanskrit retains it at the beginning of a word, but suffers it at the end of a word, under certain conditions, to pass into the Visarga or slightly heard final breath. Indeed in Sanskrit as in Latin the true *h* is the relic of an aspirate: in Greek it never appears but as the representative of a lost spirant. It must have been on the wane even when denoted by the symbol H, as is proved by its being sometimes omitted in old inscriptions[3]: and I agree with Professor Curtius that, although the fact of its omission in the alphabet established at Athens at the end of the Peloponnesian war cannot be taken to prove its absolute loss—we know it must have remained by its aspirating effect on consonants—yet it proves at least that it was verging to extinction: moreover the sound

(ii) S = rough breathing.

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[1] Schleich. *Comp.* 219.

[2] *Gr. Et.* 568. Prof. Curtius however rejects this explanation of a misplacement of sound (p. 641), preferring to suppose a mere late mistake. No doubt such did occur, but when other causes can be given, these have surely the first claim to be regarded.

[3] *Gr. Et.* 634.

was probably growing rare when it was so often placed wrongly, as *ἵππος, ὕδωρ, ὑπό*, &c.[1], words which can be shewn from other languages to have originally begun with a smooth breathing: the same mistake occurred in Latin and for the same reason, e.g. when *umor, umerus*, &c. had *h* prefixed to them: the gradual loss of the *h* from some forms produced an uncertainty in its use, which caused its introduction into other forms where it had no business. The Athenians, as I have mentioned before, offended most in this respect: in Aeolic the loss of the *h* was so regular, that the tendency to introduce it wrongly never gained ground.

The loss of the rough breathing in Greek leads to much confusion. Thus it is difficult to distinguish in compounds the negative *a* from the *ἀ* which came through *ἁ* from *sa*, "with," except by the sense, e.g. in *ἀδελφός*, where we are guided to the derivation *σα-δελφο-*, born of the same womb, by the Sanskrit *sa-garbha*, which is perhaps the same word, though the change of *g* to *δ* is very difficult.

(iii) S is lost.

Frequently there is no trace of the *σ* left at all. Its loss at the beginning of a word before a liquid or nasal, as in √*(σ)ρυ, (σ)νυός*, &c., will come under the general head of Loss in consonantal groups. But the loss which has produced most effect on the language is its falling out between two vowels, in verbs as *τύπτῃ* from *τύπτε(σ)αι*, in nouns as *γένους* from *γένε(σ)ος*. To this very important rule there are hardly any exceptions; and these again are principally where the loss of the *σ* would have caused great confusion. Thus if the *σ* had been allowed to fall out e.g. in *τάσις* (from *τα-τι-ς*) the result would have been the same as the dative of the article. Therefore in these derivative nouns, and in inflections like *τίθησι* and *τίθεσαι*, and in some few other cases, the Greeks used sufficient effort to retain the spirant. The contractions resulting from its regular and constant loss have been described systematically under the diphthongs.

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[1] *Gr. Et.* 640.

The change of *s* into ρ is pretty well confined to the Laconian: the nature of it will be described under the changes of Latin *s*. Thus we find πόρ instead of πούς, τίρ for τίς, θιόρ for θεός, &c., among the glosses of Hesychius: παλεόρ is παλαιός in Aristophanes[1].

(3) *Changes of v.*
(*i*) *V* = Ϝ.

(3) The remaining spirant *v* was known to the Greeks later than *y* by a distinct symbol, the Digamma, as it was called from its form. This Ϝ, as is well known, is found on old Aeolic and Doric inscriptions, and unmistakeable traces of its presence (as well as of the other semivowel) are to be found in Homer; not indeed with perfect regularity: sometimes e.g. we find ἰδεῖν and sometimes Ϝιδεῖν[2]; this would be not unnatural at a time when the sound was dying out: but it accords best with the theory that the poems were arranged late. There seems to be no reason to suppose (what is possible on phonetic grounds) that either of the other spirants *y* or *s* passed into Ϝ before they disappeared. Ϝ is the representative of original *v*, and of that only, in spite of one or two mistakes in inscriptions, natural at a time when the *v*-sound had become almost as strange as *y*, but the symbol Ϝ was still remembered[3]. That the sound was the same as that of the English *w*, not *v*, is most probable from the easy transition of the semivowel to the vowel, and *vice versa:* see also the arguments respecting the sound of the Latin *v*.

Examples of the symbol Ϝ in Aeolic and Doric are to be found in Ahrens[4]. Thus we have Ϝοι in Sappho[5] and Ϝείπην (i.e. εἰπεῖν[6]); though here, as well as in Homer, it was often omitted; e.g. φάεννŏν εἶδος[7], though √*vid* probably retained the *v*-sound at least as long as any other word. In spite indeed of the term "Aeolic digamma," used by grammarians, the evidence of the surviving fragments would seem to shew that the Aeolic commonly changed *v* to *u*, or hardened it (by dissimilation generally) to *β*; it was retained, however, more regularly by the Boeotian variety of the Aeolic, which resembled the Doric more than any other[1]. In Doric we have the evidence of numerous glosses of Hesychius[2], where indeed the symbol used is Γ, but where it is almost certain that the Ϝ must be replaced, the mistake being that of the copyist: it is indeed possible that a *g* should be produced before a *w*-sound, as it has been produced in French *guêpe, gâter:* the tongue (as has been already pointed out) is in the same position for sounding *w* as for sounding *g*: but the action of the lips is added for the *w*. But Ahrens has pointed out that the glosses in which this *γ* occurs, although generally Laconian, yet sometimes bear the mark of being Lesbian and sometimes Boeotian: and it is certainly not conceivable that *γ* should be found in all these diálects instead of *v*, without more explicit evidence for the fact. Also Ϝ occurs in tolerable frequency in inscriptions of the old Doric; e.g. in words like *κλέϜος*, *αἰϜεί* (compare *aeuom*), &c. But even from these it is clear that the letter was rapidly passing out of common use.

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[1] *Lys.* 988: see for more examples Ahrens, II. 71, &c.

[2] Thus in *Iliad* I. 203 we read

ἦ ἵνα ὕβριν ἴδης Ἀγαμέμνονος Ἀτρείδαο;

but in line 262

οὐ γάρ πω τοίους ἴδον ἀνέρας, οὐδὲ Ϝίδωμαι.

[3] See *Gr. Et.* 368.

[4] *Dial. Graec.* I. 30, &c.; II. 42, &c.

[5] II. 1. [6] Id. XXVI. 2. [7] Id. III. 2.

(ii) Ϝ = υ. It is resolved into *υ* in *δύο* certainly in common Greek; and in Lesbian we have forms like *χεύω* for *χέϜω*, *πνεύω* for *πνεϜω*, *ἀύηρ*, *ἀύως*, &c., where the letter is entirely lost in Attic Greek. In all these the *υ* is the radical vowel, intensified in the present-stem; but it must have taken the *w*-sound (that is, Ϝ) before the vowel *ω*: which was then written as *υ* by the Aeolic when they lost the symbol Ϝ. The *υ* is also found in the Ionic *γουνός*, the genitive of *γόνυ*, instead of *γονϜός*[3]: in *μοῦνος* for *μον-Ϝος*, &c.

It appears as the rough breathing at the beginning of

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[1] See numerous examples from inscriptions in Ahrens, I. 169, &c.
[2] Id. II. 53, &c.
[3] *Comp.* 222.

(iii) V= rough breathing.

a word; so that all the spirants in Greek can be resolved into *h*. This is at once seen by comparison with the Latin: *ἕσπερος* = *uesper; ἕννυμι* has the same root as *uestis.* The rough breathing thus produced is liable to the same affections as that which represents *σ*; thus we have *ἔσθης*: *ἵστορ* (whence *ἱστορία*) came to have the smooth breathing in time, as the verb (*ἴδμεν*) seems very early to have had.

Sporadic substitutes of v. (iv) V=β.

These are the regular substitutes for *v*, found to some extent in all dialects. Many more examples might easily have been given of these substitutions: but a few suffice, because they are familiar. But there are others very difficult to explain, which occur sporadically, or in one dialect only. Thus in the Laconian *v* appears commonly hardened to *β*; e.g. as in *βέργον* (where the original *v* is shewn by our "work"), in *βέτος* for *ἔτος* (Latin *uetus*, originally a "year," whence the adjective *ueter-nus*, as *diurnus* from *dies*), in *βεικατι*, *βέκας*, and many other cases where the sound is initial: in *ἀβείδω*, *ἀβώρ* (Lesbian *αὔως*), in the Cretan *ἀβέλιος*, the Argive *ὤβεα* (compare Latin *oua*), and other words where the sound was medial. And one example common to all Greek is given by the common verb *βούλομαι*, which is the Ionic form of *βολ-γο-μαι*, Aeolic *βόλλομαι*, and severe Doric *βώλομαι*. That the original consonant was *v* seems clear from Sanskrit *vri* (VAR), Latin *uolo*, Gothic *vil-jan*, and Sclav. *vol-it-i*[1]: it is scarcely to be supposed that all the other languages agreed to weaken a sound preserved only by the Greek. This *β* then, like the dialectic varieties given above, must be regarded as a strengthening, though there is no apparent reason for it. *V* sometimes passed into *β* before *ρ* or *λ* in the Aeolic, as we shall see hereafter; but here the reason is obvious, the influence of the following sound: but no such cause can be assigned for these initial changes. Was the hard Doric *β* an exceptionally weak sound, itself hardly stronger than *v*? This is possible, and the change

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[1] *Gr. Et.* No. 659.

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is intelligible, if the Greek *v*-sound were a true labial, not a labio-dental; that is, either our *w*, or the labial *v*: then a weak *b* would naturally pass into this sound. Curtius thinks[1] that *o* and *υ* may have had a dissimilating effect on the ϝ, just as we saw in Latin that *vu* was regularly avoided; and Curtius thinks that *ferb-ui* from *ferv-* and *bub-ile* from *bov-* are due to this principle[2]. So perhaps the *β* in *βούλομαι* may be due to the combined influence of *o* and λ: but this principle will not explain the Laconian words where *o* does not occur more than any other vowel.

(v) *V*=*μ*. Another variation of *v*—into *μ*—has been often assumed[3]; the change is probable for a very small list of words, scarcely more than those in which *μ* passes in obscure dialects into *β*. Curtius allows the change for *μάλευρον*[4] from √ϝαλ, whence *ἀλέω*, to grind corn. Max Müller[5] thinks that here and in some other words initial *μ* has been dropped, and refers *ἄλευρον* to MAR, whence Latin *mola*, &c. Curtius denies the loss of initial *μ*, as also the transition from *μ*, a common and easy sound, to *v*, a sound for which the Greeks had no liking, and which was becoming very uncommon. This argument, I think, is strong; and it will account for the change of ϝ to *μ*, although to us the latter may seem the harder sound. The two are pronounced so closely together (that is, if we assume that the Greek *v* was a true labial), that in chance cases the Greeks, wishing to avoid *v*, might easily slip into *μ*. Other words, in which Curtius allows the change, are *μαλλός* (Latin *uillus*, and *μῆλον* can hardly be separated from this group), *μέλδομαι* by *ἔλδομαι*, *μάρπτω* by Sanskrit √*vark*, *μολπίς* by *ἐλπίς* (a dialectical variety in Hesychius), and *ἀμφήν* by *αὐχήν*. It is commonly assumed in *μόσχος* by *ὄσχος* and *μηρύω*[6] by *ἐρύω*. It will be seen that in all these cases there is much uncertainty.

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[1] *Gr. Et.* 533.
[2] See however Corssen, *Krit. Beitr.* 165, and Schleicher, 255.
[3] See Curtius, pp. 539—545.
[4] Theok. xv. 116.
[5] *II.* 323.
[6] Theok. I. 29.

I may mention here the pretty certain change of *α*Ϝ(*ι*)-*νος* —from *avi*, Greek *ὄ*Ϝ*ι*—into *ἀμνός*, though this is not substitution, but arises from the influence of the *ν*. In the simple cases of substitution, the *μ* must be regarded as one of the many attempts made by the Greeks to avoid the *w*-sound which was so unpleasant to them. The same struggle led to a different result in many words, i.e. to the introduction of a weak vowel-sound before the *w*, which then fell out, leaving the vowel behind it: such cases are *ἐ*-(Ϝ)*έλδ-ομαι* beside *μέλδομαι*, and many others where the *μ*-form does not occur, as *ἐ*-(Ϝ)*έργω*, *ἐ*-(Ϝ)*εἰκοσι*, *ἐ*-(Ϝ)*ίση* (=*αἶσα*), perhaps *ἑορτή* compared with Sanskrit *vrata*, &c.

The change of Ϝ into *γ* is more strange. It occurs in no common word, but is supported by some rare dialectical forms, which need not here detain us[1]. It must be regarded as an irregular anticipation of the change (regular in modern Greek) by which *γ* is sounded as a strong *y*[2]: but the very small number of words, for which the change from Ϝ to *γ* can be assumed, is totally inadequate to prove that *γ* had universally sunk into the weak sound of modern times. The Boeotian *ἰών* for *ἐγών* undoubtedly points to a weak sound of the *γ* in that dialect: we have before seen that the Boeotian resembles the modern Greek[3]. Forms like *γαῖα* and (Ϝ)*αῖα* are of course not in point: the *γ* here is radical and the parasitic *v* has forced it out.

I have thus shewn the different simple sounds to which the spirants sank in Greek, and how they sometimes passed out, leaving no mark at all. Further changes worked by them will be found under the head of Assimilation, and still more when we come to treat of indistinct articulation.

II. Substitutes for the spirants in Latin.

The spirants in Latin have been also very considerably affected; but not in any way which so profoundly influenced the character of the language as the changes above-mentioned modified the Greek. The Latin had indeed no special symbols for *y* and *v*; but the sounds were denoted pretty regularly by *i* and *u*; they had not nearly so many substitutes as we have seen in the Greek.

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[1] See *Gr. Et.* 546.

[2] See Geldart, p. 30.

[3] See page 252.

(1) Changes of Y.
(i) Y = i.

(1) First, *y* had its full sound preserved by *i* at the beginning of words, as *iug-um, ius,* &c., or syllables, as *in-iustus;* and between two vowels, as *plebeius, aio, eius,* &c.[1] According to Priscian this *y*-sound between two vowels in two syllables was originally denoted by *ii,* e.g. *eiius:* so that even three *i*'s might meet together, as in *Pompeiii*[2]: according to Quintilian this usage survived down to Cicero's times. It must be remembered that when *a, e, o* or *u* precede the *i* thus produced from *y*, the combination is not a diphthong, but a vowel followed by a consonant. After consonants the *i* might be either the vowel, or it might still have the semivowel sound; e.g. *princip-ium*[3], *conubium*[4], &c.

(ii) Y is lost.

It is frequently lost altogether, e.g. in the verbs of the first and second conjugation, where the *a-o* and *e-o* represent the Indo-European and Sanskrit *aya;* the original *a* being split up, as in Greek: it is dropped in *ob(y)icio* and *ob(y)ex,* and other compounds of *iacio:* in *cunctus* for *co-iunctus;* rarely in comparatives, as *min(i)or* and probably *plus* for *plo-ius;* in *ero,* which stands for *es-yo*[5]. From these examples it is clear that the semivowel sound was in the main preserved by the Italians, only with no symbol to distinguish it from the cognate vowel.

(2) Changes of S.
(i) S = s.

(2) *S*, unlike the Greek σ, is retained regularly before a vowel, and sometimes before consonants at the beginning of a word; it is frequently lost at the end, at least in the common pronunciation, and in the older poetry; but replaced through the influence of the Greek rules, in the nominatives of nouns of the *o*-declension, as *bono-s,* not in those of the *a*-declension, as *aduena(s),* except some-

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[1] *Comp.* 252.

[2] See Corssen, I. 299.

[3] Hor. *Od.* III. 6. 6.

[4] Lucr. III. 776, and Munro's notes: I think the evidence is in favour of the long *u* in the Augustan age.

[5] *Comp.* 252. Corssen (*Krit. Beitr.* 498) would derive *-dum* and *-dem* from *dyam,* i. e. *divam.*

times *paricidas* and the rare *hosticapas;* nor in the genetives of the *a*-, *e*-, or *o*-stems. Examples are given in plenty by Corssen[1] from inscriptions of the age of the Second Punic war, of nominatives where the *s* was not written: but it reappears regularly at the end of the second century B.C.: by the beginning of the fourth century A.D. final *s* was again entirely lost[2]. S is held by Corssen to have been sounded strongly when initial, and generally before or after consonants: but weakly between two vowels, and after *n*, which was itself weakly pronounced before *s*, and often entirely vanished[3]; so that *s* was really in the same position as if a vowel had immediately preceded it. These two sounds can have been only the common *s* and *z*, the hard and soft sibilants. But it has been already mentioned that the symbol *z* fell out of the alphabet at a very early period: and it is the most natural inference that the sound was lost also: it was probably this *z*-sound which passed into *r*, as will be pointed out immediately. Mr Roby seems to me quite right in denying that *s*, when it remained unchanged between two vowels, had the sound of *z*[4]: if so, it should have passed into *r*, like others similarly situated. This view is supported by the fact that there is very often a wavering between *s* and *ss*, e.g. *causa* and *caussa, usus* and *ussus:* and similar waverings have been already cited as evidence of the strength of the sound: here *ss* would seem to be in general etymologically correct, the first *s* being the result of assibilation of the final letter of the root; then the recognised strength of *s* in these words led to the dropping of one. There is good evidence for the use of *ss* down to a late period in the best MSS. of Virgil and Quintilian's express statement[5] as to the usage of Cicero. As both *caussa* and *causa* occur side by side in the same inscription[1], it cannot be imagined that the first was sounded *causa* and the second *cauza*. Next we have

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[1] I. 286.

[2] Id. I. 294.

[3] E. g. *cosol* for *consul*, on the tomb of Scipio Barbatus, *formo(n)sus*, &c. See p. 81.

[4] *Grammar*, p. liv.

[5] I. 7. 20.

(*ii*) *S*=*r*.

the cases where *s* became *r*, which are very numerous, and characteristic of the language. Thus we find *Lares* instead of the *Lases* of the Carmen Arvale, *ara* instead of *asa*, which is found in every other Italian dialect[2]; *quaero* is the younger form of *quaeso*; *gero*, *haurio*, *uro* shew the original *s* in their supines: *eram* and *ero* are from √*es*: the genitives *arboris*, *muris*, &c., are from bases *arbos*, *mus*, &c., which in later times sometimes allowed even the *s* which marked the nominative case to sink to *r*, as *arbor*: in the genitives plural *r* is the substitute for the old *s*, which in Greek fell out altogether; compare *dearum* for *deāsām* with *θεά(σ)ων θεᾶν*[3]: *plurimus* is the *plusimus* of the Carmen Saliare. This change of *s* to *r* is also found before *n* and *m*; thus *verna* is *vesna*[4], *veternus* is *vetus-nus*, the *e* being due to the following *r*: and *carmen* is most probably *cas-men*[5], in spite of the Greek *ποίημα*, which would lead us to derive *carmen* from KAR "to make," which is undoubtedly found in *cre-are*: but we have *Casmenae*, the Latin Muses, which would be inexplicable except from KAS, whence the Sanskrit √*çam̃s*, "to say" or "praise." Lastly, *s* sinks to *r* at the end of a word after a vowel, as in *amor*[6], and *arbor* just mentioned. According to Cicero, Papirius Crassus (consul 336) was the last of his race who was called by the old name Papisius: without pressing this statement too far, we may fairly conclude that the change was growing general about that time. It was not a very great one: the *r* must have been the strong trill: for which the mouth is just in the position for sounding *s* or *z*; but the tongue is held more loosely. The tolerably synchronous establishment of the *r* and dying-out of the *z* is strongly in favour of Mr Roby's view, that where the *s* remained it was the hard sibilant.

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[1] Corssen, I. 282.

[2] *Ib.* I. 229.

[3] I do not mean that *θεός* is the same word as *deus*, see p. 34.

[4] See p. 142.

[5] *Krit. Beitr.* 406.

[6] Analogous to this change in the South European family is that of *s* (final) into *r* in the Norse among the languages of North Europe. Thus the inflectional *s* of the nom. appears as *r* in masc. strong nouns and some feminines, e. g. *heim-r*, *feld-r*, *bruð-r* (fem.). *Mer* and *þer* are datives of the 1st and 2nd pronoun corresponding to Gothic *mis* and *thus*: *hwer* (who) is the Gothic *hwas*. The verb AS makes in the present: 1. *em*, 2. *ert*, 3. *er* (*es*), 1. *erum*, 2. *erut*, 3. *em*. The plural nom. of nouns also shews *r*, as *heim-ar*, *feld-ir*, *bruð-ar*.

Old Italian z.

We find the actual symbol *z* both in Oscan and in Umbrian. From *menzaru* (i.e. *mensarum*) and *horz* (i.e. *hortus*) we see that the other Italian dialects possessed a distinct symbol to denote the soft sibilant, which had died out in Latin soon after the time of the XII. Tables. Z does not reappear at Rome till the common introduction of Greek words: when it was again used, but to represent *ζ*, a very different sound. When it appears in Plautine manuscripts it is through a confusion with the later *z*: for the Romans of Plautus' time undoubtedly represented *z* by *s* or *ss*, according as it was initial or medial: *sona*[1] (*ζώνη*) or *badisso*[2].

(iii) S is lost.

Sometimes, though only irregularly, *s* vanishes altogether between two vowels, just as it did in the Greek. Thus we have *uim* which must be for *uisim* from *uis*, for *uires* stands for *uis-es*. *Vēr* for *ueser* (*Ϝέ(σ)αρ*) has been already mentioned. Similarly the *s* is lost in genitives like *die*(*s*)*i*, whence eventually *die*, *plebe*(*s*)*i*, &c.[3].

(3) Change of V.
(i) V=u.

(3) Finally, *v* in Latin has much the same history as *y*. It is represented by *u*, e.g. in *uideo*, *nouos*, *ouis*. Sometimes this *u* is simply the vowel, as in *ecus* (*equos*), *relicuos*[4], &c. Not unfrequently it fell out, like *y*: e.g. in *s*(*u*)*ibi* and *t*(*u*)*ibi*, the roots being *sva* and *tva*; in *de*(*v*)*os*, *so*(*v*)*os*, &c.: in verbs like *fluont* from *√fluv*, and especially in the perfects, &c., formed with suffix *-vi*, e.g. *no*(*ue*)*runt*, *no*(*ue*)*ram*, &c. Further examples, if required, will be found in the *Compendium*[5].

(ii) V is lost.

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[1] So *Trin.* 862, ed. Brix: sector sonarius, i.e. a cut-purse.

[2] See Corssen, I. 295.

[3] *Krit. Beitr.* 465.

[4] E.g. in Lucr. I. 560. Perhaps the length of the first syllable may mark an assimilated *d*, *red-licuos*: cf. *sella* for *sed-la*.

[5] pp. 253, 254.

V not = m.

The supposed change of *v* into *m* in *mare*, compared with Sanskrit *vāri*, "water," is rejected by Corssen[1] rightly, I think. He shews that the root *var* is preserved in Italian river names as *Varusa*, *Varranus*, &c., so that *mare* more probably belongs to √*mar* in the sense of "the waste." The first derivation may seem better as regards sense, but must be rejected as sinning against the laws of sound: the second need not be accepted, or only provisionally till another is discovered which satisfies the sense better, and is equally possible phonetically[2].

The sound of *v* in Latin has been much discussed of late[3]. The arguments of Mr Roby and Prof. Munro appear to me to prove conclusively that it was not the English labio-dental *v*: but it is not quite certain, to my mind, whether it was *w* or the labial *v*, though the former is more probable. I have only room to give the merest summary of these arguments: but they are easily accessible. The most important are derived, first, from the absence of any distinct symbol for *v*: and as *u* was sounded (oo), it is probable that the consonant was the nearest possible to (oo), that is *w*: that there was some slight difference is shewn by Claudius' introduction of a new symbol. Secondly, the interchange of the *u* and *v*-sounds is more explicable on the *w*-hypothesis; e.g. *genua* and *genva*, *solvo* and *soluo:* so is (thirdly) the loss of the *v* in *ama(ue)ram*, &c.; and (fourthly) the retention of *o* after *v* in words like *ceruos*, whereas it otherwise sunk to *u* (oo); now (vo) and (voo) are about equally easy sounds, but (wo) and (woo) are not; compare the frequent loss in English of *w* before (oo), as in wool, woman, &c. Fifthly, the name *vau* (whence our *vee*) given to it in post-classical times, according to Priscian, because of its resemblance to the digamma, is more intelligible if the sound was *w*: the name by analogy should have been *ev* (for, in momentary sounds, the vowel follows, in continuous sounds it precedes the consonant), and, doubtless, would have been so if the sound had been *v*: but it would have been inaudible, or nearly so, if the consonant was *w*; and, therefore, the vowel was in this case post-fixed. The above arguments are all Mr Roby's: to him also is due a most thorough discussion of the transliteration of *v* into Greek: the fact, that *β* is often found there for it, is the strongest argument for the *v*-sound. Two questions here arise: what was the sound of *β*? and how far was *β* used? In reply to the first, *β* is certainly *v* in modern Greek; but this *v* seems to be labial, not labio-dental: and I have already pointed out the affinity of the labial *v* and *β*. Consequently, if *β* had represented *v* regularly in Greek transliteration of Latin words, this would be an argument only for the labial sound of *v*, that is, for something nearer our *w* than our *v*. But the representation of *v* by *β*, as Mr Roby has clearly shewn, occurs but rarely in the older writers, and with increasing frequency the later we pass along the scale. Thus, in Polybius (second cent. B.C.) *ου* is regular: in Dionysius Halicarnassensis *ου* is much more common, but *β* is also found: but in Plutarch (first cent. after Christ) the number of times in which *β* occurs is 180, while *ου* is still found 323 times. It is clear, therefore, that this transliteration of *v* by *β* cannot be separated from the tendency to confuse together the *v* and *b* in Italian itself, which shews itself in the second century after Christ, and afterwards increases: but which probably occurred, at least dialectically, much earlier, if we may judge from double forms, such as *Labici* and *Lauici*, *Fabius* and *Fouius*, &c.: it is by far the most probable that the *v*, in all such cases, was the labial *v*, which passed into *b* irregularly, but never permanently: thus, *uiuere* was *bibere* in inscriptions of the fifth century after Christ, but the *v* is found again in modern Italian. The occurrence of a labial *v* in Latin would also account for rare changes, like *ferueo* and *ferbui*, *boues* and *bubile*, &c. Therefore, so far as the argument from transliteration goes, we seem to have evidence for a *w*-sound, or a labial *v*: and, combining this argument with those already adduced, I think it most probable that *v* was generally *w*, but sometimes (dialectically) a labial *v*.

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[1] *Krit. Beitr.* 237.

[2] *M* and *v* interchange frequently in Welsh: as in *moel* and *foel*, a hill, *mawr* and *fawr*, great, &c.: the symbol indeed here is *f*, but the sound is *v*, and is, so far as I can detect, labial.

[3] See the *Academy*, Nos. 20—23; and the admirable discussion in *Roby's Grammar*, pp. xxxii.—xlii.

4. *Changes of the Aspirates in Latin.*

Lastly, I shall take under the head of Substitution the numerous changes of the aspirates in Latin. Some indeed of them seem to be due to *Loss:* others, if Corssen's explanation of them be true, should rather come under the head of indistinct articulation. But since neither of these causes can be certainly made out, and since, if divided, the history of the aspirates would be less intelligible, I have thought it better to put the whole of the changes together under the simplest head: at all events one sound has been substituted for another.

The Latin aspirate f.

The most remarkable point in the history of the aspirates in Latin is that each of them can be represented by one symbol, the peculiar Italian *f*. That this *f* is no aspirate is obvious, if only from the fact that it has not the power of the Latin momentary sounds to assimilate a nasal which precedes it: we have *im-petus* for example, but only *inficio*[1]: this shews that the *f* is quite different from the Greek φ, which has the assimilating power, as in ἐμφαίνω[2]. For the difference of sound between these two, we have Priscian's well-known dictum: that *ph* is produced "fixis labris," but *f* not. This need not necessarily mean that *ph* was a momentary sound (though it probably was) and *f* a protracted one: it may only mean that *ph* was a labial and *f* a labio-dental: which last statement is probable on other grounds.

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[1] Corssen however (I. 138) quotes some examples from the *Corpus*, as *com-fluont*, *im fronte*. But these are certainly exceptional.

[2] See Curtius in the *Zeitschrift*, II. 333.

F represents original BH and DH at the beginning of a word:

It regularly occurs as the representative of initial BH. This we should expect from its partially labial character. Thus we have *fari* from BHA, whence Greek φά-ναι; *fui* from BHU; *fugio* from BHUG, &c. But it is hardly less frequently found as the representative of initial DH. That aspirate has left no Latin exponent of its own kind, at once dental and aspirate, or even a dental spirant: *f* has taken the place. Thus *fumus* is the Latin derivative of DHU, the same in form as θυμός and Sanskrit *dhûma; fores* represents *dvâra* (Sk.) and θύρα: *firmus* is from DHAR "to hold firmly;" a root which gives an extraordinary number of derivatives in Latin[1], including *formido* "stiffening fear," *forma, forum,* and many names of "strongholds," as Formiae, Ferentinum, Forentum and Ferentia: many more examples are given by Corssen. Both the labial and dental aspirate are regularly represented at the beginning of a word by *f.*

sometimes even GH.

But there are even cases where initial *f* represents GH. Such are *fel,* which seems undoubtedly to be the same as χολή, our "gall," that is from original *ghal;* the verbs quoted by Priscian and Festus, *futire* and *futare,* with *futilis* are from √*fu,* the same as √χυ in χεϝω; *formus* and *feruor* stand by Sanskrit *gharma,* our "warm," while the Greek shews a change from the guttural to the dental in θερμός: *fames,* and *ad-fatim fatigo* are from the same root as χά-τις; *friare* and *friuolus* are akin to χρί-ειν. Commonly however there is another form beginning with *h,* existing side by side with that in *f,* and used by educated men[2]; we have *faedus,* but classical *haedus,* our "goat," where the Teutonic has kept the *g* of the original GH: *fordeum* and *hordeum,* German *gerst; fariolus* and *hariolus,* Greek χορ-δή; *folus* and *holus,* Greek χλοή; *fostis* and *hostis,* German *gast,* our "guest;" &c. This *f* for *gh* is only initial.

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[1] I. 148.

[2] *Krit. Beitr.* 212, &c.

In Latin the h was commonly dropped in the middle of a word.

If we continue our search, we shall find that this *f* does not occur much in the middle of Latin words. We have *scrofa*, the pig, conceived as the "grubber," by the side of *scrob-s*[1], and probably *scrib-ere.* But, as a rule, we shall find that BH has almost universally under these circumstances passed into *b*: e.g. *ambo, tibi, lubet*[2], *nubes*[3], &c., with hosts of others. But it is an instructive fact that by the side of the Latin *b* there is found *f* in the other Italian dialects. Thus *Safinus* is the Oscan for *Sabinus;* the proper names *Alfius* and *Alfenus* should be compared with the Latin *Albius* and *Albinius; Orfius* with Latin *orbus*, &c.[4] The same *mutatis mutandis* applies to DH: this is *d* in Latin *medius* (*madh-ya*), in *aedes*[5], in *dedo, condo*, &c., from DHA "to place," &c.: but the Oscan for "middle" is *mefia;* and the Oscan *Rufium*, with the proper names *Rufus, Rufinus*[6], &c., seems to shew that *rufus* "red" was borrowed by the Romans, their own word being *ruber*. The root from which the two forms came is certainly RUDH, the Sanskrit *rudhira*, Greek *ἐ-ρυθ-ρός*, our "red:" *ruber* therefore shows us that in Latin *b* can represent medial DH; as we see also from *uber* (*οὖθαρ*, "udder")—but *Ufens, Aufidus*, in different parts of Italy; from *uerbum*, a "word," and *barba*, a "beard:" in these last two words the traces of original DH are preserved by the Teutonic languages with great fidelity, and by them only.

It is clear then that both DH and BH were regularly represented in Italy by *f*: though the Latin alone preferred the more distinct *d* and *b* within a word. At an early period the DH must have passed into *bh* in Italy: so that from original *rudhira* came the old Italian *rubhro*, which then split into Italian *rufru* and Latin *rubro* just on the same analogy (as Curtius points out[7]) as old Italian *tibhi* (where BH is original, compare Sanskrit *tubhyam*) split into

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[1] Corssen, I. 146.
[2] See p. 151.
[3] See p. 129.
[4] Corssen, I. 147.
[5] See p. 192.
[6] Corssen, I. 151.
[7] *Zeitsch.* II. 334.

Umbrian *tefe,* Latin *tibi.* This weakening of *dh* to *bh* is neither impossible nor unnatural: we have already seen how inexactly *d* was sounded in Latin, so that it could pass into both *l* and *r*. But I think we may believe that the breath at the end of each aspirate was somewhat strongly sounded in Latin, so that the distinction between the *b* and the *d* was not appreciable, and therefore they sank to the same spirant *f*. This view appears to me to be supported by the fact that *f* from *bh* sometimes passes into *h*: as in *harena* for the old Italian and Sabine *fasena: haba* exists by the side of *faba: herba* is most likely from √*bhar,* compare φορβή[1]; and *mihi* undoubtedly stands for *mibhi,* the loss of the *b* being possibly due, as Curtius suggests, to the dissimilating influence of the labial *m*. Now there are tolerable indications that *h* was a strong sound in the old Latin: although in the Augustan age no doubt it had grown weak[2], and was constantly dropped, as in (*h*)*anser,* (*h*)*olus,* &c. But the strength of the breath in former times, when the changes between different classes took place, would be a good reason for the change between strong *h* and *f* with a strong breathing. And the same conclusion may be drawn from the occasional substitution of *f* for GH mentioned above. I pass now to the more regular changes of GH, to complete the history of the aspirates.

Changes of GH.

GH is generally represented by *g* when not initial. Thus *ang-or* is from AGH, whence ἄχος, &c.; *lig-urio* is from LIGH (λείχω); so also *anguis, unguis, ningit,* &c. have lost the *h*[3]; when it stands at the beginning of a word as in *gramen, granum, grando,* &c., it seems to be generally followed by *r*, which absorbed the breath but left the *g*[4]. Initial GH is regularly represented by *h*; as *hiemps* (GHI, whence χι-ών, &c.), *heri* (Sanskrit *hyas* for *ghyas,* Greek χθες where the θ is peculiar[5]), *hostis* (from GHAS, whence our "guest:"

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[1] Corssen, I. 102.

[2] Id. I. 106, &c.

[3] *Comp.* 245.

[4] See Grassmann, *Zeitsch.* XII. 89, &c.

[5] See *Gr. Et.* 454.

hospes may not improbably be the "protector of strangers," *ghas-pati* from PA: *gospoda* is a "host" in Polish[1]), and many others. H is even found at the end of a root in √*veh* and √*trah*[2]: I have already said[3] that the *h* here must have been strongly guttural, or it could not have changed to *c* in *uec-tum*, *trac-si*. These, with the irregular initial *f*, are the substitutes of GH.

The aspirates when initial pass into breaths, when medial into soft letters.

From these facts we see that the aspirates, when medial, are regularly represented by the corresponding unaspirated softs in Latin (though not in common Italian); when initial they are represented by a sound which was originally no doubt a weak aspirate, but was probably at an early time no more than a spirant or breathing: nay more, the one single sound *f* can stand for all the original aspirates, probably, as I have suggested, from this being pronounced with a strong breath, which neutralised the distinction of class. This variation has nothing in it contrary to the usual character of phonetic change.

Corssen suggests[4] that it may have been caused by an "irrational" *u* springing up after the letter, so that *gh* and *dh* should become respectively *ghŭ* and *dhŭ*, then both turn to *fŭ* and so to *f*. This is very possible: and is supported, at least for *gh*, by the forms *anguis* (originally *aghi-s*) and *breuis*, i.e. *breghu-is;* also by the analogous springing up of *u* after *g*, as *ting-u-o*, *ning-u-o*.

Explanation of the appearance of the soft letters.

But how are we to account for the appearance of *g*, *d*, and *b*? These are stronger forms than *gh*, *dh*, *bh*: and yet there is no apparent reason for any strengthening. I suggest the following explanation. We have seen that the Graeco-Italians brought with them into Europe the aspirates *gh*, *dh*, *bh*: sounds which have been explained as soft letters followed by a breath. Such pronunciation is still retained in India. But it does not seem to have suited any European nation. Among the Graeco-Italians the breath appears to me to have changed into the spiritus asper; whatever the difference in sound between the original breath and the spiritus asper was originally, it must have been very slight, consequently the change could not be difficult. Such a change seems to me to explain the subsequent history of the aspirates in Greek and Latin. The aspirate had become really a double sound: and the two component parts acted upon each other. In Greek (as we shall see) the second part assimilated the first. In Latin one part drove the other out and so caused loss: at the beginning of a word the first part fell away (conformably to the regular Latin usage, as we shall see hereafter), wholly in *gh*, perhaps with some slight remnant of sound in *bh*, both when original, and when it represented *dh*: when the aspirate was not initial, Italian usage differed; the Latins preferred to retain the first part, though even among them *f* is sometimes found: the rest of Italy kept the *f* here also. I may add that the difference in the Greek and the Italian methods is quite in accordance with the usual treatment of compound sounds in the two languages.

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[1] Benfey, *Gr. Wurz. Lexicon*, II. 210.

[2] The gutturals are preserved in A. S. *wegan*, to carry, "weigh" anchor; and English "drag."

[3] *p. 122.*

[4] I. 160.

Corssen[1] regards the Latin *b* as produced from the Italian *f*: of *g* he gives, I think, no other explanation than that it is "aus *gh* verschoben[2]." No doubt we might have expected to find *f* universal throughout Italy; but we do not so find it, unless we agree with Corssen that Latin *b* comes through the middle step *f*: and, apparently to explain the strengthening, he suggests that this *b* is here a weaker sound, more like the Greek *β*[3]. But where is there any proof of this? He has himself shewn elsewhere that Latin *b* is the "ordinary labial media[4]." Surely it is at least equally permissible to regard the Latin *b* as a dialectical variation, dating from the earliest times. Indeed I am entirely unable to enter into Corssen's view of the origin of the *f*. He believes[1] that the Italians did not bring *bh* with them into the peninsula. Then they must have brought *f*. But whence did they bring it? The Greeks have no such sound: it must have been developed after the separation of the two races, and therefore presumably in Italy. Corssen argues that there is no trace of *bh* in Italy at all. But, according to my view, *b* is a distinct trace of it. Secondly, he says that no European nation had kept the *bh*. But the Greeks must have done so; else where did they get their *φ*? Whatever may be the reason of the hard aspirates in Greek, there can be no doubt that they were derived in some way from the soft aspirates. Lastly, if the Italians did not bring *bh* with them, why did they bring *gh*? This Corssen probably admits to be Italian, for he does not derive *g* from *h*. But surely *gh* and *bh* stand or fall together[2].

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[1] I. 140.

[2] I. 91.

[3] I. 171.

[4] I. 126.

Thus then the forms under which the aspirates in the middle of a word are represented in Latin, result partly from Loss, if my view be correct, or from irregular Substitution, according to Corssen: the initial forms are probably produced by indistinct articulation. But, as I said above, since the reason for the changes cannot be certainly assigned, I have preferred to consider them under the most general head.

II. Loss.

1. *Loss of Aspiration in Greek.*

This subject may be taken first under the head of Loss, since the result is the same as that which we have been

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[1] I. 140.

[2] In the same page, where Corssen denies the existence of *bh* in Italy, he makes the strange statement that the Zend alone of all the Indo-Germanic languages has preserved the *bh*. He here most unaccountably overlooks the Sanskrit; and the Zend (at least according to Schleicher's *Compendium*) has *not* preserved the *bh*, which it represents by *b* and *w*.

This loss only sporadic in Greek though regular in Latin.

discussing in the last section—the loss of the breathing which is the second component of the aspirates. But this result is much less frequent in Greek than in Latin. Loss of the *h* is not the common end of the Greek aspirates; it occurs in very few certain cases, which are thoroughly examined by Curtius[1]. But the principle seems to me the same as that which operates regularly in Latin in the middle of a word; though its action in the Greek is only irregular.

Loss of the breathing is generally assumed in *γένυς*, *ἐγώ*, and *μέγας*: the corresponding consonant in Sanskrit in all these is *h* for *gh*: so that GH would seem to be the original letter, did not the Gothic shew us *kinnus*, *ik*, and *mikils* (Scotch "mickle"): and the *k* here points to *g* as the original, and to *gh* as being a Sanskrit weakening. Cases in which BH has turned to *β* under the influence of a preceding nasal are rather the results of assimilation: e.g. *θάμβος* (if this be from √*ταφ*), *ὄμβρος* (Sanskrit *abhra*); they are few in all. It seems to me that the undoubted cases of pure loss are confined to the hard aspirates which, as we have already seen, are peculiarly Greek developments, where the second part, the spiritus asper was likely enough to drop off and be lost. Thus we have the roots *ὀρυχ* and *κρυφ*, &c. (as seen in *ὀρύσσω*, *κρύφα*), but *ὀρυγή* and *κρύπτω*[2]: we have √*αλθ* but *ἀλδαίνω*; √*ἐλυθ* but *ἐπήλυδ-*; *βρέμειν* by the side of *fremere*, and not impossibly *φόρμιγξ*: *λαμβάνειν* but *λαφυρον* and *ἀμφι-λαφ-ής*; here also the Sanskrit has √*labh*. Why this tendency to drop the rough breathing should act just on these few words and not on others we cannot explain: all sporadic change is capricious; we can do no more than assign a plausible cause for it; perhaps here the rolling sound of *ρ* and *λ* (one of which occurs in all the words) may have been strong enough to cause the rough breathing to be felt not necessary though optional;

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[1] *Gr. Et.* 476, &c.

[2] *Ib.* 481.

just as we saw that *h* was dropped from an original aspirate followed by *r* in *gramen*, &c. in Latin.

Curtius remarks[1] that this change in Greek was not likely to be frequent; the tendency in Greek lies the other way, as we shall hereafter see. To this opposite tendency are due the forms *δέχομαι*, *τεύχω*, &c. by the side of *δέκομαι*, *τύκ-ος*; *αὖθις* from the Homeric *αὖτις*, &c.; in all these cases the Ionic has kept the original form, not weakened a stronger one. But there is certainly weakening in cases like the Ionic *ἀπ' οὗ*: not of course in the preposition but in the pronoun, which loses its rough breathing in pronunciation to suit the Ionic love of soft sounds, though the symbol was retained in writing, to avoid confusion.

2. *Loss of one or more out of a group of Consonants.*

Possible origin of these groups.

This is, perhaps, the most natural form of loss. Heavy masses of consonants become unendurable in all languages, though all do not deal with them in the same way. It is true that they often seem to be radical; and therefore it might be argued that what our fathers could endure might have been endured by their children. But in reply to this I may say, that in roots which contain groups of consonants, e.g. STA or SRU, it is very probable we have not reached to the ultimate simplest form. Ultimate it is to our analysis however, and will probably remain so. I know that some philologists contend that all roots originally consisted of a single consonant and vowel, or even of a single vowel. This is very possible, but if we attempt to cut down the roots into simpler forms to suit this theory, we are simply engaging in a task for which we have no sufficient data, no guide but the analogy of actually occurring simple forms to which we endeavour to make our more complete roots correspond. On the other hand, though in most cases we cannot discover what these simplest forms actually were, this is no reason for concluding that there were no simpler forms. Analogy is deceptive if we attempt to analyse; but the fact, that we can with tolerable certainty resolve some compound roots into simpler forms[1], is an indication that such simpler forms may exist for others, though we cannot discover them. Thus it is possible that SRU may have been at an earlier time SAR-U[2], the U being a formative suffix: then the A may have fallen out, leaving SRU, a sound convenient to Hindus, Lithuanians, and Germans, but inconvenient to Graeco-Italians, as we shall see. But such a simpler form, though possible, is quite uncertain; I only give it to shew that such heavy consonantal roots may themselves have been the result of phonetic change acting in times far beyond our limited range of vision.

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[1] *Gr. Et.* 476.

Sometimes these consonant-groups were certainly not radical but caused by combining roots and suffixes; sometimes even by the involuntary springing-out of a parasitic sound after the original consonant. But however they were produced, they were governed by the same laws. I shall therefore not dwell on their origin here, reserving the account of parasitic sounds. I shall consider the loss under three heads; initial, medial, and final. It is never very common in the Greek, because, as I have already said, the Greeks preferred where possible to assimilate one sound to the other. In Latin it is always common; but, as might be expected, generally sporadic.

i. *Initial loss: principally of s and v both in Greek and Latin.*

In Greek no consonants seem to be lost at the beginning of a word except the spirants *s* and *v*; and even these fall out generally before a protracted, rarely before a momentary sound. Thus *s* is lost in √*ρυ* for √*σρυ*; *νυ-ός* for *συνός* (page 133, where it was suggested that the oldest form was *sunusa*); *μέριμνα*, Sanskrit √*smar*; *νίφα* from SNIGH, Sanskrit √*snih*; *νευρά* (in German *schnur*, our "snare"); *μειδιάω* (Sanskrit √*smi*, our "smile," with a different determinative consonant), &c. When this loss occurs before *κ* or *π* traces are also often left of the fuller sound; thus we have both *σκάπτω* and *κάπετος*, *σκῦτος* and *κύτος*, *σπαίρω* and *πάλλω*, *σπέλεθος* and *πέλεθος*: it is rather common before *τ*, as *ταῦρος* (by the German *stier*), *στέγος*, and *τέγος*, &c. Nearly all these changes, it will be observed, are Graeco-Italian, and may very likely have taken place before the separation. The second consonant would seem to be lost in *σύν* for *σκύν*: *ξύν* shews misplacement of the *σκ* just as *σπ* was liable to change to the commoner *πσ* (*ψ*): *κυν*, however, is preserved in the name *Κυνουρία* (i.e. *con-finia*[1]). It has been already pointed out that the older form is sometimes evidenced by apparent irregularities of scansion in Homer, as *ἐπῑ̀ νευρῇ*, where the length of the *ι* is probably due to the surviving trace of the *s*; sometimes by assimilation, as *φιλο-μμειδής*, where the first *μ* is the old *σ*: and hence came arbitrary lengthenings or doublings of consonants by the minstrels on the analogy of these etymologically correct forms, as *ὑπὸ̄ νέφεος*, *ἔμμαθε*, &c. These examples are taken from Curtius[2].

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[1] See, for example, pp. 41—44.

[2] For SAR, see p. 150.

Original *v* is lost in *ῥίζα* for *Ϝρίζα*, the O. H. G. *wurza*, and modern "wurzel," English "wort;" *ῥάκος* is from VRAK. Since the Latins had *radix* by *ῥίζα*, and *lacer*, perhaps *lacerna*, by *ῥάκος*, this loss also would seem to be Graeco-Italian. The same is not true of *ῥήγνυμι*, Latin *frango*; this form is curious. The oldest form of the root seems to be BHRAG, for the Gothic is *brikan*, to "break:" then this BH irregularly weakened itself to Ϝ[3], evidenced by Aeolic *Ϝρῆξις*, which vanished in common Greek: the

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[1] In all these cases the *s* seems to have been Indo-European; but it is possible that it may have been prefixed in primitive times to original *t*, and that the double forms are therefore both original. A prefixed *s* seems tolerable certain in many English words, as *screech*, *scratch*, *scrunch*, *snarl*, *sneeze*, *snore*, &c.

[2] *Erlaüt.* p. 46 (Engl. trans.); and see above, p. 30.

[3] This weakening occurs also in *Ϝαγ.* (Sk. *bhanj*) but in no other word.

Latin form is regular[1]. But with this exception it would appear that these losses of initial spirants were no peculiarity of the Greek; they were rather due to a tendency which was acting in Graeco-Italian times, and never ceased in Latin, but which was almost stopped by the Greeks when left to themselves. The Greeks have no objection to hard combinations, like *σκ*, *στ*, *σπ*, at the beginning of a word; they dislike the amalgamation of different consonants *within* a word.

In Latin the regular loss is also of *s* and *v*. No real Latin word begins with *sr*, *sn*, or *sm*[2]; hence we have (parallel to the Greek losses given above) *riuos* from SRU, *nurus*, *memor* for *sme-smor*, *nix* for *snigh-uis*, *neruos*, perhaps *mi-rus* from SMI, &c.; there is also no initial *sl*, so that *limus* may be our "slime[3]." Corssen[4] adds another to the possible etymologies of the much-contested "Rome," by deriving it from SRU (*Srouma*), the "stream-town," and explains the name by reference to the insulated condition of the old Roma quadrata on the Palatine, before the Tiber was kept within its banks. From the same root he also very plausibly derives Reate (*Sreu-ate*) in the high constantly inundated valley first drained by Curius Dentatus. Sometimes *s* has fallen out before *f*, as *funda* (= *σφενδόνη*), *fides* (a string, Greek *σφίδη*), *fallo*, by *σφάλλω*.

Passing to the momentary sounds we shall find *s* lost principally before *t*; in *torus* (Gk. √*στορ*), *tego* (*στέγω*), *temetum*, *tundo*, *torpeo*, *turgeo*, and many others[5]. Corssen, against Curtius and Max Müller, would derive *ton-itru* from STAN, found in Greek *στένω*[6]. Sometimes *s* is lost before *c*, as in *caueo* (SKAV), *cutis* by *σκῦτος* and *κύτος*, is from SKU, whence comes also *cauos*, and perhaps *caelum*;

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[1] *Gr. Et.* No. 655.

[2] Even some borrowed words lose it in Latin, as *myrrha* (*σμύρνα*).

[3] *Krit. Beitr.* 429; but see *Gr. Et.* 342.

[4] *Krit. Beitr.* 428.

[5] Corssen, I. 278.

[6] See p. 99.

culter is from SKAR, our "shear;" *casa* may be (*sc*)*ad-sa*[1] for *scad-ta*, the past participle of SKAD, "to cover," Sanskrit √*chhad*. *S* may have fallen out before *p* in *penuria* (σπάνις) and *pituita* (πυτίζω) from √*spu* + *tu*, a lengthened form of SPU (in *spuere*), in *parcus, pannus, parra*, and the derivatives of SPAL. Sometimes *st* falls away entirely before *l*, as in *lis, locus* (the form *stlocus* points to STAL), and *latus* (*stlatus* being the past participle of STAR, "to strew," and meaning that which is strewn, scattered, widened). Hence the distinction between *nauis stlata*, a vessel built broad for merchandise, and *nauis longa*, the man-of-war[2].

V is lost in much the same words as in the Greek: *lacer* and *radix* are given above; *lupus* may perhaps be the Sanskrit *vṛika;* and *ros* (Ϝέρση, or ἔρση) is connected with √*vṛish*. Sometimes, but rarely, the lost *v* is the second letter, as in *canis* (κύων, Sanskrit *çvan*)*;* and *v* is lost, though not without leaving its trace, in a rather large list of Latin words, where original *va* has passed into *o*: such are *soror* (Sanskrit *svasṛi*), *socer* (original *svakura*), *sonus* (Sanskrit *svana*), *sopor* (root SVAP), &c. The Greek is quite irregular in such of these words as it has retained, as ἑκυρός, ὕπνος, &c.

Further loss in Latin.

Besides this somewhat regular loss of *s* and *v* we find sporadic loss of initial mutes:

of C before *v*, in *uermis*, Sk. *kṛimi*, and Gothic *vaurm-s*[3], probably *uapor*, beside καπνός.
before *l*, in *lamentum* (*clamor*, &c.), *laus* (√*clu*).
of G before *v*, in *uenter* (γαστήρ), and *uorare*[4], *uenire* (√*gva*, whence Greek βαίνειν, Gothic *kviman*[5]).
before *n*, in *notus, nomen, narrare, nitor*.
of T before *l*, apparently in *latum* for *tlatum* (√*tol*).
of D before *r*, assumed by Corssen[6] in *ruere* and *race*-

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[1] *Krit. Beitr.* 448.

[2] *Id.* 462.

[3] *Id.* 2.

[4] See p. 116.

[5] See *Krit. Beitr.* 57—64.

[6] *Id.* 142.

mus (Sk. *draksha*); but in neither case is the connection certain.

before *v*, in *uiginti* from *dvi:* compare *bis* (*duis*), *bellum* (*duellum*).

before *y*, in (*D*)*iouis*, (*D*)*ianus*, (*d*)*ianua*.

of P before *l*, in *laetus* for *plaetus* (compare Sanskrit *prîta*), *lătus* (πλάτος), perhaps *lanx* (πλάξ); *lauere* (λούειν) may be from PLU, which occurs in Sanskrit and Greek πλύνειν[1].

Connected with this initial loss is the frequent misplacement of consonants in groups at the beginning of a word. Thus κραδία is Latin *cord-*; from √*bhrak* (φράσσω) omes *farcio*, and many other cases occur of a consonant hus thrown forward to avoid a heavy consonantal beginning. In some, no doubt, it is not quite certain how the onsonants were placed in the radical form; but the geneal tendency is unmistakeable.

Loss of initial c when standing alone.

I may also mention here the curious loss of *c* (K), not n compounds, but standing alone at the beginning of ome pronominal words, as (*c*)*ubi*, (*c*)*uti*, (*c*)*unde:* the *c* is preserved in *ali-cubi*, *ali-*(*c*)*unde*, &c. Other supposed osses, as *aper* (κάπρος), *amo* (Sk. *kam*), seem to be uncertain. No other consonant seems to fall away similarly; the reason here is quite uncertain. Forms like ἐγείρω in Greek are sometimes explained as instances of mutilated reduplication, i.e. γεγείρω: this is possible; perhaps in a very few cases initial γ may have been the continuous sound (nearly *y*) which represents it in modern Greek; but I incline to think that the vowel is prosthetic.

ii. *Medial loss: hardly found in Greek,*

Loss in the middle of a word is rarer. It is hardly found in Greek. Schleicher gives as an example τέτυφ(σ)θε, where the accumulation of consonants was doubtless too much for the Greek feeling of euphony. The same objection to impossible combinations of sound caused the Ionic forms like ἐστάλαται for ἐσταλνται: the *a* here may grammatical suffix, the two syllables, which formerly existed side by side with some sort of mutual independence, became fused together, and the accent almost always fell back. This loss of accent made the last syllable comparatively unimportant, and liable to phonetic corruption: and this corruption is found, as a general rule, in proportion to the inability of a language to accent the last syllable: and therefore Latin, which never accentuates the last syllable, has suffered more on the whole from loss than Sanskrit or Greek: this we have already seen in the shortening and loss of its final vowels, and shall now see again in its consonantal loss. The sounds thus lost will of course differ much for different languages: one people found a final sound difficult which presented no difficulty to another; thus the Greeks liked final *s*, which the Italians slurred over, weakened, and finally lost. But the principle is the same for all languages: final unaccented syllables had a tendency to weaken or drop their difficult sounds.

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[1] *Krit. Beitr.* 150.

Monotony of consonantal terminations in Greek.

But the operation of this principle could be affected by other causes. In Greek the last syllable is often accented and yet weakened, e.g. *τιθείς* for *τιθέντς*[1]. And in one respect at least the final syllable in Greek seems to have suffered more than in Latin. It is more monotonous, a great sign of weakness in language. As is well known, the Greeks allowed no consonant to end a word but the light sounding *ν* (into which the common Graeco-Italian *m* of verbal and nominal suffixes was therefore changed), *σ*, and rarely *ρ*: so final consonants were either dropped altogether, *σῶμα(τ)*, *ἔφυ(τ)*, Sanskrit *abhût; ἔδειξα*, Sanskrit *adiksham; πατέρα*, (*patrem*); or softened, as dentals into *σ*: e.g. *τέρας*, *πρός*, *δός*, *τετυφός*; or *μ* into *ν*, as *μοῦσαν*, *ἔτυπτον*[2]. Latin, on the contrary, allows considerable variety of final consonants. But there is no monotony in the final *vowels* of the Greek, whereas, as we have seen, in Latin a final vowel tends to sink to *e*. This then is the explanation of the obvious difficulty, that final accented syllables are yet weakened in the Greek. The vivid life of the Greek vowels overpowered the final consonant or consonants, and reduced them to absolute uniformity, or completely extinguished them. The power of the vowel over the consonant in Greek, which is seen here, may be contrasted with the power of the consonant in Latin to assimilate the vowel[1]: nothing could better shew the difference in the genius of the languages.

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[1] A similar loss of *n* before *s* is not uncommon in the Northern languages. Thus we have Norse *gás* for *gans* and our "goose:" "dust" for *dunst* has been already mentioned: also before *th*, as in our "tooth" for *toonth*, original *danta*.

[2] *Comp.* 236, &c.

When a group of consonants ended a word, they were sometimes all dropped, as in *γάλα(κτ)*, *ἄνα* vocative of *ἀνακτ*; generally the last was retained, *τιθείς*, (*τιθέντς*), *ἀληθής* (*ἀληθεσ+ς*), with compensatory lengthening of the vowel, the vowel-sound being naturally prolonged to fill up the gap of the missing consonant. Sometimes however the first consonant was kept with the same lengthening of the vowel, probably from analogy, as λέγων (λέγοντς), *ποιμήν* (*ποιμένς*); I infer that the first method is the older, from the probability of forms like *διδούς* (*διδόντς*) being older than λέγων (λέγοντς): but how the change arose I cannot say.

The effects of this frequent loss of dentals and spirants on the Greek vocalism have been already mentioned under the head of the Greek diphthongs. It is certainly the most distinguishing mark of the Greek consonantal system[2]. The loss of the spirants themselves was considered under the head of Substitution.

The ν ἐφελκυστικόν.

A curious phenomenon in connection with the subject is the *ν ἐφελκυστικόν*. This is in its origin no mere poetic license, though it may have been afterwards metrically useful. It seems to me to have been rather a sort of "after-sound," resembling the Sanskrit Anusvâra, a feeble echo supplying the place of a lost consonant, probably resembling the sound of the French nasal after a vowel, rather than the clear dental nasal. Thus *λέγομες*, which is still found in Doric, was doubtless the old Greek form, parallel to *legimus:* then the ς fell away, and left *λέγομε:* the final syllable was then thickened in pronunciation, and so became finally *λέγομεν*; where it is not to be supposed that *ν* is a substitute for *σ*[1], but, as I said, a new "after-sound," produced after a weak termination: which could afterwards, when convenient, be sounded in places where no consonant had been lost, as *λέγουσιν*, probably in consequence of the strong nasalizing propensity of the Greeks[2]. Schleicher (*ib.*) points out that the loss of final ς, though rare in Greek, is paralleled by *οὕτω*(ς), &c.

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[1] See pp.

[2] In Norse the defect is of the gutturals. "Even in writing the contraction is not marked [e. g. ꝥo=*doch*=though: ꝥjo=thigh: má=might (verb)], the change having taken place long before writing began; whereas in English, although the same phonetic change has taken place, the old Saxon spelling is still kept, because the change is of much later date, [15 cent.?] when the old sound was fixed in writing." Cleasby, *Icel. Dict.* p. xxx.

Greater range in Latin.

In Latin—at least as we know it through the Roman writers—there was no such dislike to the accumulation of consonants at the end of a word as we have seen in Greek. Any number of consonants which could be pronounced was allowed. Thus—to borrow examples from Schleicher[3]—we have *ferunt, hunc, hiemps, arcs, urbs,* &c.; all of which are impossible to the Greek ear. The only exceptions seem to be these: that no double consonant is permissible, e.g. we have *os* and *fel,* but the genitives *ossis* and *fellis:* and that no two mutes are allowed: thus we have *lac*(*t*), compare *γαλα*(*κτ*), &c.[4]

But in the older Latin—the spoken Latin of which Plautus is the written representative—which, as we have so often seen, continued to be the language of the people, even when Virgil and Horace were delighting the literary circles of Rome with verses which must have been read in a manner widely different from the pronunciation of common life: in this Latin final consonants were regularly dropped: they were often actually omitted upon inscriptions, not merely ceased to be audibly pronounced as in the Romance languages, where they have been fixed by literature even when unheard in conversation. The consonants which most frequently fell away in this manner are the most common final letters *s*, *m*, and *t*. For the loss of these Schleicher gives the following examples.

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[1] See Schleicher. *Comp.* 238.

[2] Cf. Quintilian, XII. 10. 31: Graeci *n* litteram "iucundam et in fine praecipue quasi tinnientem ponunt."

[3] *Comp.* 270.

[4] *Ib.* 271.

Loss of final s.

Final *s* is dropped upon inscriptions in nominative cases, like *Tetio*(*s*), *Furio*(*s*), *Cornelio*(*s*). In the older inscriptions, those of the Second Punic war, it is much less often written than dropped[1]: though when the *o* in these nominatives was weakened to *u*, the *s* seems to have been regularly retained. By the beginning of the Empire, *s* even preceded by *u* was often lost on inscriptions: and a few centuries later, *s* had vanished from every case as well as from the nominative. In written Latin of the classical age, as we know, the *s* was generally kept. Still even here there are plenty of instances where its loss in writing shews how little it was commonly heard. Such are forms like *amabare* by the side of *amabaris*, and similar losses in other tenses: forms also like *mage* and *pote* for *magis* and *potis*. And it was regularly dropped in other forms, only a few traces surviving in Plautus; or in words, which from some old association retained their archaic form. Thus *s* was regularly dropped in the nominative plural of the *o*-declension. Yet we find *hisce homines* in Plautus[2], *magistreis*, *publiceis*, &c. on inscriptions. In the genitive of the *a*-declension we have *familiae*, yet sometimes the older *familiā*(*i*)*s*. And lastly, through previous loss of the vowel of the termination, we have *pueros*, *puers*, *puer*.

Loss of final m.

For the omission of final *m* on inscriptions we need not go farther than the often-quoted epitaph of Scipio, the consul of A. U. C. 495. This begins, as given by Mommsen in the *Corpus*,

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[1] Corssen, I. 286.

[2] *Trin.* 877, and Brix's note.

> **Honc oino ploirume cosentiont R[omani]**
> **Duonoro optumo fuise uiro [uiroro—*e conj. Ritschl.*]**
> **Luciom, Scipione, &c.**

Here the *m* is omitted five times, and written once: whether written or omitted the scanning seems to be the same. There can be no doubt that it was not heard, but continued in an irregular fashion to be written to prevent confusion of cases, &c., the reason why it was kept in later Latin. That it was hardly heard is shewn by its elision in the Augustan poets, but that it was not absolutely dumb seems proved by its occurring not elided in Lucretius[1].

Loss of final t.

Final *t*, as Schleicher points out, seems to have had the sound of weak *d*. As such it was sometimes written in the ablative case: as *Gnaiuod*, sometimes dropped altogether in the same line[2], as *patre*(*d*). *Haut* is sometimes *haud*, sometimes *hau*[3]. The late Latin shews the *t* written in personal terminations, as *uehit:* but the old Latin often omitted it, as in *dede* for *dedit*, *dedro* for *ded*(*e*)*ront;* compare the classical *dederunt* and *dedere*. This loss was universal in Umbrian; as it was in the late Latin and the derived modern Italian. Indeed the loss of final consonants is felt much more in Umbrian than in Latin, but not in Oscan. Schleicher suggests reasonably enough that at the time from which our inscriptions date, a common form had established itself among the wide-spread Sabellian tribes, which became the literary dialect, and therefore ceased to vary further.

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[1] At least in monosyllables; see III. 1082, and Munro's note on II. 404.

[2] Epitaph of Scipio.

[3] Cf. loss in Icelandic of the final *t* in the negative suffix *-at*, e.g. *skalat* and *skala*, Cleasby, p. xxvi.

III. ASSIMILATION.

1. *The Greek Aspirates.*

I have already, in the account of the Latin aspirates, given the reason why I believe the Greek aspirates to be the result of assimilation. The change of the original breath to the spiritus asper seems to me to explain the changes of these letters in both Greek and Latin, whilst I know no other that does. The original pronunciation of the soft letter, followed by a breath, possible to the original people, possible to the Hindu, and to his descendant[1], was impossible to the nations of the West, who therefore changed the breath to the more familiar and very slightly different spiritus asper. Even in Sanskrit this occasionally took place; e.g. in *hita* for *dhita*, the past participle of *√dha*, and the root *han* for *√ghan;* in these the breath has become the rough breathing, and expelled the *d* and *g*. In Latin we have seen that sometimes one member of the new compound was left, sometimes the other. The Greek followed its usual course. Instead of ejecting one of the sounds—a process, as we have seen, rare in Greek—it allowed the second to assimilate the first, and, therefore, instead of *gh, dh* and *bh,* the soft aspirates, we have regularly the hard *χ, θ, φ*.

Pronunciation of the Greek aspirates.

That the original aspirates at least passed through this stage is allowed even by those who maintain that *χ, θ, φ* were sounded in classical Greek not as hard aspirates, but as hard spirants (as they are in modern Greek) corresponding to German *ch,* English hard *th*[2], and the labial *f* respectively. This view is taken by Prof. Arendt[3]: the soft aspirates, according to him, became first the hard aspirates, and then the hard spirants; the immediate passage would be impossible. Curtius allows the change from the hard aspirates to the spirants, but does not believe that it took place until at least the first century of our era. As it is of some interest to know what was the pronunciation of these important sounds in the mouths of the great men of Greece, I will briefly examine the arguments on both sides.

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[1] Thus Prof. Arendt (Kuhn and Schleicher's *Beiträge*, II. 289) declares that he has heard a Mohammedan, whose mother speech was Urdû, pronounce these sounds countless times without the slightest insertion of a vowel between the soft explosive sound and the *h*, and without the soft being changed into the corresponding hard.

[2] As in *thick, breath,* &c.

[3] K. and S. *Beit.* II. 424, &c.

Probably they were not sounded as spirants.

Arendt argues that the difference of sound between the Greek aspirates (if real aspirates) and the Latin equivalents would be too great for languages so cognate: an argument which certainly does not convince me. And when he adds that θήρ passes into the by-form φήρ (like Latin *fera*), it is quite true that the difference of sound between the spirants *th* and *f* is less than that between the aspirates *th* and *ph*; but this does not prove that *t'h* could not pass into *p'h*, or that φήρ and *fera* agree from anything more than accident. Arendt next examines cases where the aspirates occur in combination with other aspirates or consonants; and no doubt in these cases the difficulty of the genuine aspirate is most felt. Words like Σαπφώ indeed are as easy on one hypothesis as on the other: σθ is easier, as Arendt allows, if θ be an aspirate, but he calls in the English pronunciation to shew that θ can be a spirant in this combination, e.g. in *Demosthenes*[1]. But undoubtedly his strongest argument is furnished by the combinations χθ and φθ. It is quite impossible to sound *c'ht'h* together fully. This Curtius himself grants[2]; but he says in reply, I think quite truly, that in no language do we find that in groups of consonants each particular consonant preserves its peculiar value completely under all circumstances. Some one must be partly, if not wholly, sacrificed: this is the very reason of the loss which we saw so frequent in consonantal groups. So in words like *χθές* and *ἄφθιτος* it is conceivable that the breathing may have been sufficiently given by the second; so that *kt'hes*, and *apt'hitos* were heard. Curtius mentions the form *ἀπθιτος* as occurring on an inscription; and he suggests that the sound may even have been *apft'hitos*, by assimilation of the breath, thus paving the way to the spirants of the later Greek.

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[1] He seems to think that "asthma" and "isthmus" are pronounced in England as *astma* and *istmus*: surely either the spirant is heard fully, or entirely dropped, as *asma*, *ismus*; and he is uncertain whether "sixth" is pronounced as *siksth* or *sikth*.

[2] *Gr. Et.* 387.

Arguments to prove they were really aspirate sounds.

On the other hand, Curtius adduces some positive arguments[1] to prove that *χ*, *θ*, *φ* were real aspirates, which seem to me on the whole satisfactory. The first of these is the ease with which the *h* fell off, and left the explosive element alone, in reduplication, &c.; e.g. *πέ-φυκα*, *ἐ-τέ-θην*, *ἐνθαῦτα*, the Ionic variant for *ἐνταῦθα*, &c. Leo Meyer[2] well points out that the possibility of a reduplicated *f* in Latin (*fefelli*, &c.) by the side of *πέφυκα*, &c. shews the difference of sound between *f* and *φ*; in the Greek dissimilation was necessary to avoid cacophony. On the other hand, it must be allowed that two consecutive labial spirants would probably have been equally offensive to the Greeks. Curtius' second argument is the pronunciation of these sounds by foreigners, so far as we can judge from Aristophanes; e.g. *ὄρνιτο παραδίδωμι*, in the *Birds* (1679), or the speech of the Scythian in the *Thesmophoriazusae:*

πέρ' ἐγὼ 'ξενίγκι πορμός, ἵνα πυλάξι σοι.

These may not be conclusive, but at least they shew that *θ* and *φ* imperfectly pronounced were more like *τ* and *π* than *th* and *f*. But the most convincing argument is certainly that drawn from Latin transliteration, at the time when they expressed the borrowed Greek words as well as they could with their own alphabet. If *χ* had been a guttural spirant, surely the Latins would have denoted it by their *h*, which, as we have seen, had still a guttural character. Yet we find on inscriptions *Bacanal*[1], *Antioco*[2], and many others. Similarly we find *p* in the place of *φ*, not *f*. It is true that *f* probably differed from *φ* in being a labio-dental, whereas *φ* was a pure labial; it may therefore be argued that *f* was ill-suited to express *φ*: and it may be said that the occurrence of *ἐμφαίνειν* and *imponere*, beside *inferre*, where *f* does not change *n* to *m* is a further argument. But I quite allow that *f* was a more dental sound than *φ*; for this reason the dental nasal suffered no change: and at the very least, if *φ* had been a spirant, *f* was a nearer sound than *p*: but we have *Pilipus*[3], *triumpe*, thrice repeated in the old Carmen Arvale[4], *Trupo*[5] (*Trypho*), &c. Again, the aspirate character of *φ*, as distinguished from *f*, is borne out by Quintilian's story of Cicero and the witness for Fundanius: he has been speaking of the use of *f* instead of *h* (in words like *fordeum*) by previous generations, who used *f* "pro *aspiratione* [i.e. *h*] velut simili littera: nam contra Graeci *aspirare* solent, ut pro Fundanio Cicero testem qui primam eius litteram dicere non possit, irridet[6]." This can only mean that the witness said *P'hundanius;* for it will scarcely be maintained that he said *Hundanius*: but that he used an *h* is expressly stated by Quintilian. The Latin has lost the dental spirant; therefore no certain inference can be drawn respecting *θ*: but, at all events, it always appeared as *t* (as in *Corintus*[7] and *Cartago*), not as *f*, the spirant which stands for *th* in Latin. These arguments from transliteration seem to me strong: the Latins in at least two cases possessed the spirants which would have represented the supposed Greek spirants at least more closely than the hards; and did not employ them. Again, when they finally chose to express *χ*, *θ*, and *φ* by *ch*, *th*, and *ph*, they must surely have intended to express thereby a real *προσθήκη πνεύματος*, such as Dionysius of

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[1] *Gr. Et.* 384, &c.

[2] *Verg. Gram.* I. 43.

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[1] *Corpus*, n. 196.

[2] *Id.* n. 35.

[3] *Id.* n. 354.

[4] *Id.* n. 28.

[5] *Id.* n. 1109.

[6] I. iv. 14.

[7] *Corpus*, n. 541.

Halicarnassus attributes to the Greek sound. What else could Catullus mean to express by his form *Chommoda*, when he was ridiculing a man who called *insidias—hinsidias*, i.e. put in an *h* in wrong places? Next, the modern Greek in certain cases represents the old aspirates by hards, not, as commonly, by spirants; e.g. ἔκω for ἔχω, τεκνίτης. Now it is conceivable that original aspirates should produce sometimes spirants, sometimes hards; but difficult to conceive that original spirants should turn back to hards. Then too *f* as a very strong spirant (inter discrimina dentium *efflanda*) was able to represent not only the dental but even the guttural spirant[1] in Latin. If then it could represent all spirants in Latin, why should it not have represented all three, χ, θ, φ, if they were spirants? Surely a superficial observer would have thought *f* at least as like to a spirant χ, as *c*, which he actually used. These arguments (principally of Curtius), which I have here given very briefly, seem to me as satisfactory as the case will allow of. My conclusion is that χ, θ, and φ were genuine hard aspirates at the prime of Greek literature, and that they were formed from the soft aspirates of the original speech by the assimilating influence of the spiritus asper, into which the original breathing passed[2].

[1] Just as with us it represents the guttural in *laugh*, &c., Roby, p. 33.

[2] I have to thank Mr C. A. M. Fennell, Fellow of Jesus College, for placing in my hands a paper, read before the Cambridge Philological Society, in which he maintained that these sounds were spirants in classical Greek. Many of his arguments seem to me to have weight, and they are touched upon in the text above. On the question of transliteration he says: "Until the Romans became accurate, *p* was used for φ, as being more akin to it in sound than *f*. Similarly *c* was used for χ rather than *h*, which, though etymologically representing χ, must have partly lost its guttural character, for it also etymologically represents *f*. That to a superficial observer (a Roman) the Latin *c* should appear more like a spirant χ than did the Latin *h*, is not to be arbitrarily denied. That to a careful (Roman) observer the Latin *h* might seem inadequate to represent the sound of a spirant χ, is not on the face of it improbable." Mr Fennell thinks that when the Romans wished to have a diacritical symbol to represent φ, without using a symbol foreign to their alphabet, any educated Greek might have recommended *ph*, because of the use of this compound on old inscriptions. All this appears to me quite pos-

Slight variations in use.

There is little variation in the regular use of the aspirates. The most remarkable is the loss of the breath, which, though not universal, is sufficiently common to be a characteristic of the Ionic dialect though found in the others also. The change of *θ* into *σ* in Laconian is also extensive: it is found on numerous inscriptions and in Alcman and the plays of Aristophanes. The same change has been wrongly attributed to the Boeotian on the authority of the MS. of Aristophanes only. The *θ* must have first passed into the imperfect *th* already mentioned, which closely resembles *s*. All other variations are sporadic: as the change of *θ* to *φ* in Lesbian, e.g. *φήρ*, *φήριον*; it is likely that *φ* here was labio-dental: the Boeotian takes *θ* instead of *τ* with some regularity in the 3rd person plural, as *ἔχωνθι* for *ἐχοντι*; this dialect is throughout averse to assibilation. In Doric the breath is lost in a very few words[1]: it is added to original hard letters in about as many more. The change of original *gh* to *θ* is certain in *θερμός*, but in no other word.

2. *General rules of Assimilation in Greek.*

Most of the changes of which I have here to speak are familiar from the Greek grammar. I wish to arrange them together as results of a common tendency. In most of them we shall find that a dental or a spirant is concerned, either as the active cause of the assimilation, the assimilating letter, or the sound assimilated. It is this tendency to assimilation which has produced the largest amount of change in Greek words; one consonant takes the place of another, even a consonant foreign to the original system is introduced. Yet it is noticeable how even here, in consonantal combinations, where the Greek seems to have changed so much more than the Latin, the

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sible: but I still think that the balance of probabilities leans toward the account given in the text.

[1] Ahrens, II. 81—84.

Greek in reality has not lost so much; it has not lost any sound without some equivalent; whereas we saw that the Latin constantly allowed a consonant to drop without leaving any trace whatever. The Greek is also the gainer in softness of sound.

I. Complete Assimilation.

We may consider Greek assimilation under two main heads—as complete and incomplete. In the first case either one sound passes into the other, or the two pass into some third sound, denoted either by one symbol, as *ζ*, or by two, as *σσ*, *ττ*. In the second, one sound simply becomes more like the other. Under the first head we may distinguish the following cases.

(i) Assimilation of the first sound.

(i) Where the first sound is assimilated to the second.

Such cases are *φαεννός* for *φαεσ-νο-ς*, a form which is regular in the Aeolic[1], but occurs also in Tragedy. The Attic poets may possibly have borrowed this and similar forms from the Aeolic dialect. But they certainly could not have done so if the process had not been one familiar to the feeling of the Athenian language. It is shewn indeed in forms like *ἕννυμι* for Ϝεσ-*νυμι*, which are universal throughout Hellas. Schleicher assigns to this principle the double *ρ* in *περίῤῥυτος*, *ἄῤῥηκτος*, &c. for *περισρυτος*, *α-*Ϝ*ρηκ-τος*, which is not improbable[2]. Cases like *συλ-λέγω*, *συρ-ρέω*, *ποσσί* for *ποδ-σι* (here the later Greek dropped one *σ*), are familiar to all. *ὀπ-μα* passed into *ὄμμα* in all Greek except Aeolic. But no doubt this result was much commonest in the Aeolic: in Lesbian, as *ἔμμι* for *ἐσμι*, *ἄμμες* (also Doric) for *ἀ-σμες*, *ἔμμα* for Ϝ*εσμα*; and in Boeotian *ἴττω* for *ἴστω* (as Ar. *Ach.* 911), *ἔττασαν* for *ἕστασαν*. I have already said that the Lesbian assimilates liquids and nasals chiefly; the Boeotian, dentals.

(ii) Assimilation of the second sound.

(ii) Where the second sound is assimilated to the first.

Here again the change is chiefly Aeolic. Thus we have in Lesbian *κτέννω*, *κρίννω*, *πέρροχος*, *κεννός* (for *κεν-yο-ς*), *Μίλλατος*[3], *ἐβολλόμαν*[4]: we have *ὄππα*[5] instead of

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[1] *E.g.* Sappho, III. 2.
[2] *Comp.* 227.
[3] Theok. XXVIII. 21.
[4] Id. I. 15.
[5] Sappho, II. 11.

ὄμμα, and *ὄσσομαι* for *ὄπ-τομαι*: see however the end of the next case[1].

The forms *ἔσσομαι*, *ὄττις*, *ὄπποτα*[2] are of course not Aeolic only (as far as the reduplication of the consonant goes), but also Ionic. I may add with respect to the last that the *ππ* is only found in pronominal words, in which the first *π* is not original: the old form of *ποτα* (whence *ὄ-ποτε*) was *κοτα*, then a parasitic *u* sprang up after *κ*, and produced in turn *ὀ-κϝοτα*, *ὀ-πϝοτα*, and *ὄ-ππoτα*. But I do not think that *ππ* is found in any case where *π* is radical[3]. The forms *ἔστελλα*, &c. for *ἐστελ-σα*, *τέσσαρες* for *τετϝαρες*, *πολλός* for *πολ-ϝο-ς* (whence the other form *πολύ(ο)ς*), *ὄλλυμι* for *ὀλνυμι*, *πτίσσω* for *πτισ-yω*, are of course Attic[4].

(iii) Modification of both sounds: where the first is a hard guttural or dental.

(iii) Where the two sounds pass into a third (doubled) sound.

Here we have the numerous and important cases where we find *σσ* (*ττ*) produced by the combination of *y* with a mute. If we begin with the dentals where the nature of the change is most obvious, we find *τy* passing into *σσ* (*ττ*) in *κρέσσων* for *κρετ-yων* (*κράτ-ος*, &c.), *λίσσομαι* for *λιτ-yο-μαι* (*λιτ-η*, &c.), and similarly *θy* becomes *σσ* (*ττ*) in *κορύσσω* for *κορυθ-yω*, in *μέσσος* for *μεθ-yο-ς*. In all these and similar cases we find both the *σσ* and *ττ* forms. What is the history of these two forms? Which is the older of the two? Or is there some intermediate step through which they both come, but neither of them is derived from the other?

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[1] For more examples (all of the same kind) see Ahrens, *Gr. Dial.* I. 49—69.

[2] Sappho, II. 2; III. 3.

[3] Consequently we must reject the emendation *ὑπ' ἀπταλῶ* in Theok. XXVII. 4,

ὄππυι Κύπριδος ἶρον καλάμω χλῶρον †ὑπαπάλωτ†,

where the last word is corrupt. I like Ahrens' emendation *καλάμῳ... ὑπασσάλῳ* best of any that have been offered. Mr Snow however in his recent edition of Theokritus has carried out very ingeniously Meineke's suggestion, that some proper name has been lost in the MS. word, by producing from Strabo the name *Ἄμπελος* for a promontory of Samos. Still *ὑπασσάλῳ* is nearer to the MS., and so unusual a word was more likely to be corrupted than the common *Ἄμπελος*.

[4] Further examples are given by Schleicher, *Comp.* 228. Each one that I have given is typical of a considerable class.

Pott holds *ττ* to be the oldest in the case of the verbs; where he thinks that *το* is the suffix, not *yo*. Thus he would make the order, *πρακ-το-*, *πράττω*, *πράσσω*, by regular weakenings. This however leaves the comparatives still unexplained. And further, the Doric, which elsewhere does not weaken *τ* to *σ*, has yet *πράσσω*, *θάλασσα*, &c.; so that these forms would be unexplained. The first appearance of *ττ* is in the Attic, and in Boeotian (which also shews δδ). In the *Tempora und Modi* Curtius seemed to explain the phenomenon as a Boeotism which had crept into Attica, in the first instance in order to avoid assibilation in words like *σφάσσω*, and then passed over the whole language. This explanation, improbable on many grounds, he has since, I think, dropped.

Two other explanations seem to be possible. The first is that *ττ* was produced from *τy*, as *λίττομαι*, *τέτταρες*: but that the *y* could also assibilate the *τ* (just as *ι* or *υ* could, as we shall shortly see); and thus came also *λισ-yo-μαι* and *λίσσομαι*, like *ἕσσομαι* for *ἐσ-yo-μαι*. This seems exceedingly natural and probable: we have the analogy of the English assibilation of *ti* e.g. in nation, to help us, and to suggest that the *σσ* may have been sounded as *sh*; which seems also more likely on physiological grounds, if we remember that the sound is a compromise between *t* and *y*: the change too in common use from *πράσσω* to *πράττω* would be less violent. But we are met again by the fact that the Dorians have the double *σ*, and yet do not exhibit *σι* for *τι*, the analogy on which this reasoning rests. Consequently we seem to be driven to the second explanation, to which Curtius and Schleicher incline[1]; namely, that from the influence of the preceding dental, *y* weakened itself into the soft sibilant *z*. Thus *λιτ-yo-μαι* became *λιτ-zo-μαι*, and since this union of a hard and soft letter could not be permanent, *λιτzομαι* became either by case (ii) λίττομαι, or by case (i) λίσσομαι: where however it is possible that the *t* sound was still heard though not written: the combination *ts* would be a proper counterpart to the sound of ζ (to be mentioned below); and would also, still better than the *sh* suggested above, serve to bridge over the transition from σσ to ττ in Attic; particularly if we assume that the *s* after the *t* passed, as is natural physiologically, into *sh*: so that the whole scale should be, *ty, tz, ts, tsh, tt.* This second explanation applies to final ντ, followed by *y*, as χαριεντ-*ya*, whence χαρίεσσα, πᾶσα for παντ-*ya*, &c. In favour of this view is the fact that the Boeotians in other cases hardened σ to τ, as ἴττω, &c. mentioned above. These words are not explained by the first hypothesis. It must however be borne in mind that it is not necessary that τ*y* should have had the same history in the different dialects: it may have travelled by one road in the Attic, by the second in the Doric and Boeotian.

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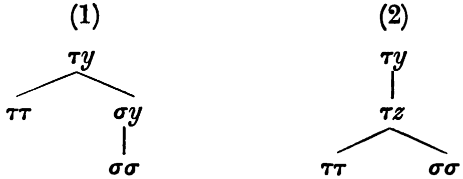
[1] See also Corssen, *Krit. Beitr.* 468.

The two explanations will be best seen thus, side by side:



Next there are numerous words in which σσ (ττ) arises from a guttural with *y* as well as from a dental. Thus κ*y* becomes σσ in πτήσσω (√πτακ), in ἥσσων (superlative ἥκιστα); there is a large list of such verbs and comparative adjectives, which does not need to be gone through: χ*y* is also σσ in βήσσω (noun βηχ-ς) and ἐλάσσων from ἐλαχύς. In these no doubt the guttural was turned first of all into a dental by the *y*; which dental then in its turn assibilated the *y*, just as it did above. The change from ἥκ-*y*ων to ἥτ-*y*ων is just parallel to that which we shall have to notice in the Latin; by which e g. *con-dic-io* passed into *conditio*, because there was no appreciable difference in the sound.

This result σσ (ττ) seems to be confined to the combination of the *hard* gutturals and dentals with *y*. This is worth observing, because in several cases it might seem as though the σσ was formed from γ*y* or δ*y*; e.g. πράσσω, πλήσσω, βράσσων, &c. But of these, the verbs are really derived from an older form, which contains the hard letter. Thus the √πρακ seems to be guaranteed by the Lith. *perk-u* and the ἅπαξ λεγόμενον, πρακές[1]. Similarly πλακ is the root of πλάξ and πλακοῦς, as well as the Lith. *plaku*, "I strike[2]." Lastly, βράσσων is probably the comparative of βραχύς, not of βραδύς, to which it is commonly assigned[3]. Other apparent exceptions admit of similar explanations.

There is no such change of a labial.

I have said that σσ results only from κ*y* (χ*y*) or τ*y* (θ*y*). This statement is not disproved by the forms πέσσω, ἐνίσσω, and some others. The first, πέσσω, undoubtedly seems to be from πεπ in πέπων, &c. But an older form is πακ; and a still older (as far as regards the consonants) is found in the Latin √*coc*. Similarly ἐνίσσω seems to belong to the Homeric ἐνιπή, ἠνίπαπε, &c.; yet the simpler form is √*ik*, found in Latin in the past participle *ic-tus;* so that ἐνιπή is a "word thrown," like ἴαμβος, where ἰάπ-τω is equally paralleled by the older Latin form *iac-io*. Similarly ὄσσα is not from Ϝεπ but the older √*vak*; and ὄσσε, "the eyes," is from √*ok*, found in the ὄκκος of Hesychius and the Latin *oculus*.

Change of a soft guttural or dental.

(iv) Where the two sounds coalesce into one single letter.

This happens when *y* is preceded by the *soft* momentary sounds, δ and γ. Thus δ*y* = ζ in ἕζομαι, from √*sed*, in ὄζω from √*od*, &c., in τράπεζα from (τε)τρα-πεδ-*y*α, in Ζεύς from Δ*y*ευς (Sanskrit *Dyâus*). These examples, with others, are given by Schleicher[1]: they are so numerous that any one may supply them for himself. They shew the origin of the Greek ζ, a compound letter, denoting first *δy*, then *δz*. Hence the compound letter ζ or *dz* has the power of lengthening a previous vowel in prosody, which power it could not have had if it had been only a weak sibilant = the French *z*. The objection to this view, that ζ was a double sound, namely, that the symbol would not have been likely to appear so early in the alphabet, is only valid against the old opinion that *z* represented *ds*: the Greek alphabet, undoubtedly, had symbols for both these sounds, and therefore did not require a single symbol to denote them: but it had none for *z*. Where ζ is dialectically resolved into σδ or δς, it must be supposed that the σ was soft, just as *s* is so often in English. Some philologists believe that *z* was sounded not as *δz*, but as the English *j*, i.e. *dj*, as in *John*. There can be no question that this sound springs naturally in our mouths from the two sounds *dy*, the original parents of ζ: but this is not a conclusive argument for the Greek language: and looking on the whole history of *y* in Greece, I think the sound of *z* more probable. The representation of ζ by *ss* in old Latin seems also to favour the view that it was a clear sibilant in Greece. The statement of Dionysius that ζ was a double letter[2] seems strong against its having been merely the French *j*: but does not make clear whether it was *dz* or *dj* (English *j*).

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[1] *Gr. Et.* 624.

[2] *Id.* No. 367.

[3] *Id.* 622.

Just as *κy* passed first into *τy*, so *γy* passed into *δy*, and then into ζ, as though the dental had been original. Thus *στιγ-yω* became *στίζω*, *μεγ-yων* became *μέζων* in Ionic, the Attic *μείζων*, from the desire to compensate for the loss of the original spirant.

It has been already mentioned that in the Boeotian the *y* assimilates itself immediately to δ, and produces e.g.

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[1] *Comp.* 231, see *Gr. Et.* 562, &c.

[2] See *New Crat.* p. 200.

φράδδω from *φραδ-yω*, not *φράζω*[1]. At the beginning of a word one *δ* suffices, as *Δεύς* for *Ζεύς*[2].

II. Incomplete Assimilation.

We may now pass to incomplete assimilation—when the two sounds do not become identical, but only approximate to each other. The principle of course is the same as that which we have seen acting above; only it is not so fully carried out. In this class we have the following main heads:—

(i) "Euphonic" changes.

(i) All the euphonic changes of grammar: by which the final hard letter of a root is changed to a soft one before a soft termination, as *δόγ-μα* from √*δοκ*, *γράβδην* from √*γραφ*: and *vice versa* a soft passes into a hard, as *λεκτός*, *λεχθῆναι*, from √*λεγ*. These have been already alluded to, and are too well known to need further description.

(ii) Changes caused by nasals.

(ii) Momentary sounds are sometimes nasalised before nasals, as *σεμ-νός* from √*σεβ*: yet we have *ὕπ-νος* from √*σϜαπ*[3]. Before *μ* dentals have a strong tendency to pass into their spirant *σ*, as *πεῖσμα*, *ὀσμή*, *ἴσμεν*, and numberless others; yet we find *ὀδμή*[4] and *ἴδμεν* in Doric and old Ionic. A nasal could change the class of a momentary sound, in *δνόφος* for *γνόφος*, where the *γ* is probably itself weakened from *κ*; compare *κνέφας*. Similarly *ἁδνός* was Cretan for *ἁγνός*, whence the name *Ἀρι-άδνη*. That *γ* ever passed into *δ* without some assimilating influence is improbable. Therefore *οὐ Δᾶν*[5] is probably = *οὐ Ζῆνα* (i.e. *Δ(y)ᾶνα*) as Ahrens explains it[6]: and *Δημήτηρ* is either *ΔιϜαμητηρ* or *Dyâvâmâter*[7]; she is never called *Γημήτηρ*. In order that *γᾶ* should have passed into *δᾶ*, a parasitic *y* must have sprung up after *γ*: which is improbable because it had F(υ) after it, as shewn in *γύη*, i.e. *γ α-α*, and *αἶα* for F*αῖα* or *γαῖα*[1].

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[1] *E.g.* *θερίδδεν* for *θερίζειν*, Ar. *Ach.* 947. This is also Laconian. See *Lys.* 82, 94, &c.: Ahrens (II. 96) gives some glosses from Hesychius to the same effect.

[2] As in *Ach.* 911.

[3] *Comp.* 230.

[4] The line *τίς ἀχώ, τίς ὀδμὰ προσέπτα μ' ἀφεγγής*; (Aesch. *Prom. V.* 115) cannot be however regarded as Attic.

[5] Theok. IV. 17; VII. 39.

[6] *Gr. Dial.* II. 80.

[7] According to Max Müller, II. 57.

(iii) Changes of nasals.

(iii) Nasals are affected in their turn by the following consonant: we have *συγ-καλέω*, and *ἀγγέλλω* (*ἀνά*); *ἔμπειρος* and *ἐμβαίνω*; and numerous others of the same sort.

(iv) Change of τ to σ.

(iv) In Ionic, Attic, and Lesbian, *τ* passes into *σ* before *ι*; as *φησί* for *φατί*. This might rather seem a case of simple substitution: but I believe that it first occurred in cases where another vowel followed, as *πλούσιος* for *πλουτ-yo-ς*, *πλησίος* for *πλατ-yo-ς*: when the change would be due to the assibilating influence of the *y*: then the softer sound was preferred universally; this *σ* for *τ* is also found before *υ* in *σύ*, but in Doric *τυ* is kept: the old form was *tva*, where again the semivowel could assibilate; and the same is probably true of the suffix *-συνη* for *-τυνη*, Latin *-tuna;* for there is a Vedic form *-tvana*[2]. The Boeotian, like the Doric, preserves *τ* where the Lesbian and Attic have softened it into *σ*. I have already mentioned the peculiar Laconian weakening of *θ* to *σ*, which may have begun in the same way as the last change, according to my suggestion.

(v) Changes of v.

(v) The spirant *v* is altered by assimilation in certain dialects. Thus F*ρόδον* becomes *βρόδον* in Sappho[3], F*ράκος* is *βράκος*[4]; we find *βράδινος*, *βρίζα*, *βρήτωρ*, &c. This change is less surprising, for we have seen that F passed into *β* in Laconian even without any neighbouring sound to influence it[5].

In the word *σφε* we seem to have a hardening of original *v* to *φ*. The old form is *sva*, which in Greek generally became *ἑ* (through F*ε*). In this case it is hard to believe that *φ* was much more than a spirant. The same change is seen in *σφώ*, the dual from *tva* (whence *sva* and *σύ*): compare the Latin *vo-s*, where the *t* has fallen off[6].

(vi) Other exceptional forms.

(vi) Lastly come some very peculiar forms which seem to be more probably due to assimilation than any other cause. These are e.g. πτόλις by the side of πόλις, πτόλεμος, &c.: κτείνω by καίνω, &c. It seems impossible to separate πόλις from Sanskrit *pura* (also = a city) and Latin *ple-bs,* perhaps also *po-pul-us* (a reduplicated form); and therefore it must be from the root PAR, to fill, which in Greek appears generally as πλα or πλε, in Latin as *ple.* This evidence excludes any possibility of τ having originally belonged to the root and then fallen out. It is clearly a Greek insertion. The only explanation of this curious change which I know, does not seem quite satisfactory. It is given by Professor Kuhn[1] and adopted by Curtius: that *y* through indistinct articulation sprang up after π, and was assimilated by the π to τ. We have seen above that π*y* never became σσ, as the other hards did; but it is not easy to see why, if the sound π*y* were difficult, it should not have passed into πε or πι, instead of the very difficult πτ. Possibly however a new parasitic δ may have sprung up before the *y*—the possibility of this will appear in the next chapter—and been afterwards assimilated by the preceding hard letter. This explanation is supported by the form χθές. Here again the dental seems to belong to the Greek only: the Sanskrit form is *hyas* for *ghyas,* Lat. *heri:* and here the Sanskrit gives the necessary *y*: χθών, according to Curtius[2], is another case in point: the older form is preserved in χαμα-ί, with which compare χθαμαλός; and the Latin *humus* agrees. Here however a different parasitic sound in Sanskrit has produced *kshamâ* in that language.

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[1] See page 110. [2] *Comp.* 459. [3] *Frag.* 69, 2.
[4] Theok. XXVIII. 11, see Ahrens, I. 34. [5] See p. 327.
[6] *Gr. Et.* 549.

Perhaps this explanation of these intrusive letters may stand till a better can be suggested. They are certainly not "euphonic" or "strengthened forms:" why did πόλις require to be strengthened? Still less are they "metrical licenses:" why should a Greek poet have the liberty of arbitrarily inserting an entirely new letter in order to make a word suit his verse any more than an English writer?

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[1] *Zeitsch.* XI. 310, see *Gr. Et.* 453.

[2] *Gr. Et.* 454.

3. *General rules of Assimilation in Latin.*

I. *Complete Assimilation.*

In Latin also we have complete and incomplete assimilation. Complete assimilation may be divided into the same heads as those which we considered in the Greek.

(i) *Assimilation of the first letter.*

(i) Where the first letter assimilated itself to the second.

Thus *sup-mus* becomes *summus, sed-la* is *sella; d* is assimilated very frequently, as in *lapillus* for *lapid(u)lus, esse* for *ed-se: t* passes through *s* in *pet-na, pesna, penna;* compare *ces-na, cena: g* has been assimilated in *flamma* (*flag-ma*): very likely, as Schleicher suggests, *serra* is for *sec-ra*[1]. In all these cases the radical vowel was short: therefore the final consonant was not absolutely forced out, but assimilated: and was written after the time when it became customary to write double consonants, not merely to make a little mark above one of them (the 'Sicelicus'). When the vowel was long the consonant was entirely lost, e.g. in *suā(d)-uis,* and other cases already mentioned among examples of Loss. Sometimes the consonant was lost even when the vowel was short; it was, however, afterwards lengthened by compensation, as in *scāla* (*scad-la*), *squāma* (*skad-ma*), perhaps *fīnis* (*fid-nis*), *fīlum* (*fig-lum*), &c.[2]

(ii) *Assimilation of second letter.*

(ii) Where the second letter assimilates itself to the first.

This change happens to *t* in superlatives after *s* or *r*: as *durissumus* for *dur-i(o)s-tumus, celerrimus* perhaps for *celer-is-tumus, celerstumus, celersimus*[3]; and numerous others[4]. After *r, s* naturally passes into *r,* as *ferrem* for *fer-sem, torreo* for *torseo:* and analogously after *l* passes into *l*, in *uellem* for *uel-sem*: *v* also assimilates itself to *l*, in *mollis* for *mol*(*d*)*uis* (Sanskrit, *mridus*), *sollus* for *sol-uos* (seen in *soll-ers*, *soll-ennis*, *solli-citus*, *solli-fides*, &c.); compare the phonetically different *sal-uos*; the cause being doubtless the strong sound of *l* at the end of a syllable.

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[1] *Comp.* 258, whence these examples are taken.

[2] Corssen, I. 646.

[3] *Comp.* 262.

[4] Mr Roby however supposes (*Preface,* p. lxi.) that these superlatives are formed with the suffix *-umo:* and that the double *s* is erroneous, representing not assimilation but the strong sound of the *s.*

(iii) *Modification of both sounds.*

(iii) Where the two letters pass into another double sound.

This takes place with some past participles in *-tus* and derivatives in *-tor*; where the *t* of the suffix together with the final letter of the root passes into *ss*. When the root itself ends in *s*, no such change commonly takes place, as *us-tus*, *haus-tus*, &c. But it occurs regularly when the root ends with a dental: e.g. *fissus* for *fid-tus*, *cassus* for *cad-tus*, *passus* for *pat-tus*, and many others: sometimes the first *s* vanishes, as in *ui-sus*, *lae-sus*, &c.: sometimes the double *s* is preserved in old Latin, as *ussus*, *diuis-sus*. In these cases Corssen gives the following explanation: the *s* at the end of the root is due to Dissimilation, as *equet-ter* becomes *eques-ter*: then *fistus* assimilated itself to *fissus*. Mr Roby argues against this view with great force[1]. He points out that although the first step is quite possible, the second, which assumes the change of *st* into *ss*, is contrary to ordinary Latin usage, in which *st* is a perfectly stable combination. He therefore holds that the *t* of the suffix first changed into *s*—a change which is certain in *lap-sus*, *fixus* (*fic-sus*), *fal-sus*, &c., and highly probable in *pressus* (*prem-sus*), *passus* (*pan-sus*), *iussus* (*iub-sus*), &c., where the root does not end in a dental, and where there is no need for dissimilation of the final consonant. In this way *fid-tus* becomes *fit-sus*, and then by regular assimilation (i) *fissus*. I think that this theory is very much preferable to Corssen's.

II. *Incomplete assimilation.*

Passing next to incomplete assimilation we find the first two cases as in Greek.

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[1] pp. lvii.—lxi.

(i) "*Euphonic*" *changes.*

(i) The "euphonic changes," by which a hard passes into a soft before a soft; as in *segmentum* from √*sec*: and a soft into a hard, as *actor* from √*ag.*

(ii) *Changes caused by nasals.*

(ii) Momentary sounds passed into nasals, as *scamnum* for *scab-num*, *Samnium* for *Sab*(*i*)*nium*, *som-nus* for *sop-nus*[1], *amnis* for *ap-nis.* Dentals passed into *n* through *s*; as in *penna*, already mentioned. It cannot be proved that gutturals were sounded as *ng*, e.g. in *magnus, tignum:* but it is probable on the analogy of the other letters.

(iii) *Change of t to s.*

(iii) We saw just above that *fid-tus* passed into *fit-sus*, and then *fit-sus* into *fis-sus* by assimilation. To assimilation also would seem to be due the change of *t* in *-tus* and *-tor* when in contact with other final letters than *t* or *d.* These are chiefly *r* and *l.* The change however is only sporadic. The *t* maintains itself in *ar-tus, exper-tus*, and many others, but suffers change in *cur-sor* and *cur-sus, spar*(*g*)*-sus*, &c. Similarly in combination with final *l, t* still appears in *altus, cultus, ultus, sepultus*, &c.: but *s* appears in *falsus, celsus, pulsus, mul*(*g*)*sus, uol-sus*, and a few more. These cases may be explained as the result of imperfect assimilation. There was probably some vacillation in sounding the dentals, similar to that already noticed in Greek, which rendered corruption of them more easy. Assibilation of the dentals is not found in languages like the Sanskrit, where they are sounded with the tongue in a definite position against the edge of the upper teeth. But where the tongue is only pressed against an uncertain point of the front palate, the position for *t* and *d* becomes similar to that for *s*, and the change would be facilitated by a preceding *r* or *l*: by sounding *s* instead of *t* after *r* or *l*, the necessity of stemming the breath, which rushes forth in a continuous stream, is avoided. In the same way we may account for the change after nasals in *pressus, passus*, &c.; in which cases, as we saw above, the assimilation afterwards becomes complete: there is however no further change in *man-sum*. But this explanation will hardly suffice for the few cases where *s* is found, though the root ends with a momentary sound. Such are *lap-sus, lixus, fixus, fluxus,* and a few more. For these I think we must adopt Corssen's explanation[1]: that the change began with those roots which ended in dentals: and that the new suffixes *-sus* and *-sor* came by degrees to be introduced through analogy into places where they were not helped by any assimilation. The tendency to soften *t* to *s* was an early one, as we see by the antiquity of the change from the older forms, *pul-tare, mertare, mantare,* &c., to *pulsare, mersare, mansum,* &c.[2]

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[1] *Comp.* 264.

Assibila-tion of c and t.

The assibilation of *c* and *t* in *ci* and *ti*, when followed by another vowel, is commonly assumed to have taken place in old Latin, as it undoubtedly did in the late Latin and the Italian. One part of the evidence for this change is the varying spelling even in good MSS. of words like *suspicio* and *suspitio*. The sound of the two must have been very similar before such a change could take place; probably much the same as in our "suspicion." The interchange would therefore be precisely analogous to that between σσ and ττ, which we saw took place tolerably early in Greek. Corssen, however, who has gone most thoroughly into the question[3], proves that there is no such wavering of spelling in the inscriptions—our best guide—till a much later period than is commonly supposed. Thus, he says that there is no variety on the most trustworthy inscriptions down to the latest times of the Empire in the following words: *contio* (i.e. *co(n)-uentio*) *nuntius* (probably *nouentius* formed, as Corssen suggests, from *nouere*, a nominal verb from *nouos*, on the analogy of *Florus, florere, Florentia*), *setius* (of uncertain origin, but with a by-form *sectius*, which may point, as Corssen thinks, to *seg-nis*), *otium* (uncertain), *indutiae* (for *indu-itiae*), *fetialis* (uncertain), *dicio* (i.e.

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[1] *Krit. Beitr.* 426.

[2] See Quint. I. 4. 14.

[3] I. 49—67.

dic-yo), *condicio* (which has nothing to do with *deditio* and other nouns formed from $\sqrt{}$*dha*, to place), *solacium* (uncertain), *patricius*, *tribunicius* (where the *c* is part of the suffix): both forms occur in proper names, like *Lartius* or *Larcius*, where a double derivation is quite possible: so that the complete confusion of the two spellings did not take place till the seventh century after Christ, though isolated instances doubtless occur much earlier. The best MSS. read *suspicio* and *suspitio*, *conuicium* and *conuitium*; the first in each case is probably right etymologically. There is sufficient evidence of the assibilation of *ci* and *ti* among the provincials, which gave rise to the confusion. *Ci* was sounded as *çi* and even *si* in Umbrian, e.g. *faciat* was *façia*, at least as early as the third century B.C.; the Umbrian had even a special symbol for this palatal sound: and *fasia* is Volscian. But for Latin there seems to be no evidence of the change of *ci*, any more than of the interchange of *ci* and *ti*, till the seventh century: while against the change there is the negative evidence of transliteration, e.g. *ουνκια* (in the sixth century after Christ), and the Gothic *faskja* and *laiktio* for *fascia* and *lectio*.

Assibilation of c, late except in the provincial dialects.

Mr. Roby[1] has brought a good deal of additional evidence to bear on the point. Thus, he points out that the same word often varies its form so as to have different letters after *c*, or to have *c* final: e.g. *hice* and *hic*, *dice* and *dic*; was the *c* first palatal in the older and fuller forms, and then made guttural again in the ordinary form? So also in *decem* and *decumus*, *cano* and *cecini*, is it likely that the sound changed? or that it was different in *lacubus* and *lacibus*, forms which at one period were doubtless used indifferently? Again, Quintilian never hints that *c* had more than one sound, though he speaks in several places of the superabundance or the deficiency of the symbols of the Latin alphabet. Then with respect to transliteration, Mr Roby thinks if the *c* was assibilated, *σσ* would have represented the sound in Greek more closely than the *κ* which was actually used: it may doubtless be replied that the *κ* was used in order to represent the etymology, not the sound; and I think this argument would have force if the Latin had not itself abolished the corresponding symbol *k* from ordinary use: but *κ* does not even pictorially represent the Latin *c*; and therefore I see no reason for the Greeks having used it for this purpose, unless it gave the sound most nearly. Furthermore, if *c* had two sounds in Latin, it is surely strange that at some of the attempts to reform the Latin alphabet it was not suggested to employ again the symbol *k*, which was lying almost idle, to represent one of the two sounds: yet there is no mention of any such idea, though much more subtle distinctions of sound were more than once expressed by new symbols[1]. To conclude, there can be no doubt that when *k* (or *c*) is followed by *e* or *i* there is a strong tendency to let the tongue slip upwards and so form a palatal instead of a guttural: and it is a fact that such change has taken place in modern Italian. But this change must have begun *at some time;* and there is no evidence for that time being nearly so far back as the classical period.

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[1] *Preface*, pp. xliii.—l. See also Prof. Munro in the *Academy* of March 5, 1871.

Assibilation of t *a little earlier.*

The change of *ti* to *si* seems to have been earlier and more general: but Corssen regards it as belonging especially to the vulgar Latin (and the other Italian dialects), and not established in the speech of educated Rome till the fourth or fifth century after Christ. It is traceable however in isolated cases much earlier. Such are e.g. *uiciens,* which has come regularly through *uicesiens* and *uicensiens* from *uicentiens:* similarly *amasius* and others with the termination *-asio* are most probably from old *-antio-: Acherunsius* is certainly from *Acherunt-io-s, Hortensius* was in old Latin *Hortentius*[2]*:* and numerous names of towns in *-esio* throughout Italy, as *Valesium, Falesii* (Latin *Falerii*), compared with others in *-ento,* as *Laurentum, Valentium;* and in *-usio,* as *Canusium, Brundusium* compared with *Acheruntium,* coincide with the other evidence for this change in all the Italian dialects, but seem to indicate that it occurred very slightly in Latin. I infer therefore that in classical Latin *ti* was sounded hard except in cases where another form in *si* actually occurs beside the latter.

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[1] Roby, p. xliv.

[2] *Krit. Beitr.* 467, &c.

IV. DISSIMILATION.

This principle has a more limited application to the consonants than even to the vowels, and for the same reason: there are not many cases in which the occurrence of the same sound twice is unpleasant to the ear. Still, few as they are, they are tolerably certain.

(i) *Change of a dental.*

(i) One case where Dissimilation acts is common to Greek and Latin: namely, when a dental comes into contact with another dental at the beginning of a suffix. In this case the final dental of the root passes into *s*. In Greek the following examples may be given: *ἀνυτ-τος* becomes *ἀνυστός*: *ἀδ-τεον* becomes *ἀστέον*: *πιθ-τος* becomes *πιστός*. Similarly in Latin, *equit-ter*(o) passes into *equester*: *edti* becomes *est*: *claud-trum* is *claustrum.*

(ii) *Loss of aspiration in Greek:*

(ii) In Greek, when two aspirates occur too closely, one is softened: *ἐ-θυ-θην* becomes *ἐτύθην*; *θι-θημι* passes into *τίθημι*. So also the suffix *-θι* of the imperative (Indo-European *dhi*), which is found e.g. in *κλῦθι*, is changed to *τ* when another aspirate precedes, as *σώθητι*. Similarly if two aspirates occur in the root, one is dropped in conjugation; for example the two forms *τύφ-ω* and *θύπ-σω* are referred to a root *θυφ*. The existence of these doubly aspirated roots has been maintained by Grassmann in his article already often referred to in the twelfth volume of the *Zeitschrift*[1]. But where there is no other proof of the existence of the two than the double forms in Greek, it is much better in my opinion to assume only one for the root and then to account for the second (which never occurs in the same word as the first) by the principle of compensation.

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[1] See also *Gr. Et.* 51.

and of initial reduplicated consonant.

To Dissimilation is also due the loss of the consonant in the reduplicated syllable of many verbs which begin with two consonants as *ἔκτονα* for *κε-κτον-α*, *ἔγνωκα* for *γε-γνω-κα*. It may be assumed also that the passage of a consonant into the rough breathing in the presents *ἵ-στη-μι*, *ἵ-η-μι* is due partly to the desire for a dissimilar sound in following syllables. In *ἐγείρω* and some other words it is more likely that the *ε* is prosthetic (as will be pointed out in the next chapter) than that the word was originally *γε-γείρω*. Perhaps too the first consonant may have sometimes fallen away even in simple nouns for the same reason: as in *ὄκνος* for *κοκ-νος*, compared with Latin *cunc-tor* and Sanskrit *√çank*. But this must rest uncertain[1].

(iii) Latin -aris and -alis.

(iii) The only regular application of this principle in Latin—which is not equally sensitive with the Greek in this respect—is the curious change in the termination *-aris* or *alis*, accordingly as *l* is found or *r* in the preceding syllable. Thus we have *uolg-aris*, *popul-aris*, &c.: but *mort-alis*, *later-alis*. Similarly the form *Pari-lia* sprang up beside the more difficult *Pali-lia*[2].

There are a few isolated cases of dissimilation in each language, which can be reduced to no rule. Such are *φι-τύω* (*√φυ*) where the change to *ι* seems to be due to the following syllable; *υ* is found in the other derivatives: *ἀλλήλω*, as Curtius suggests, is another instance of conscious change. So also in Latin *ferbui* seems to owe its *b* to the difficulty of sounding the double *u*: *tenebrae* has been already mentioned as a possible instance[3].

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[1] See *Gr. Et.* 660.

[2] Corssen, I. 223; *Comp.* 267.

[3] See p. 100.

CHAPTER IX.

INDISTINCT ARTICULATION.

Changes produced by want of clearness in pronunciation.

I HAVE now described at some length the changes arising in Greek and Latin from a weak articulation. For example, we have seen how a stronger could be displaced by a weaker sound. This is the simplest instance of absolute weakening. Sometimes, again, we saw that a stronger took the place of a weaker sound, when that sound formed part of a compound which could be pronounced more easily after such change: here, therefore, also there was weakening; a violent contrast of sounds was done away with. In a word, the new sound or new compound was always an easier sound to pronounce under the circumstances.

I wish now briefly to consider a different kind of change, caused by what I call indistinct articulation. It is possible to alter a language in another way than by merely substituting an easier for a more difficult sound; in which case the new sound, weaker though it be, is clearly heard. It is possible to pronounce a word, generally through laziness, without sufficient sharpness to give each letter its full and proper sound. In this case no other recognised letter is at first heard; but an indefinite amount of indistinct sound is produced after the letter thus slurred; which in time, if this relaxed pronunciation become common, often takes the form of the nearest sound in the existing alphabet. Thus two letters grow out of one; and a word is often actually increased; and so it may happen that the new form is not really easier to pronounce than the old one. The old saying is here justified, that lazy people give themselves most trouble. It is, I think, unquestionably the desire to save labour—to avoid the exertion required to pronounce clearly and distinctly a difficult sound—which produced this change, just as much as it produced substitution and assimilation, as we have already seen. Both kinds of change are due to that one and the same principle which causes all phonetic change: but as the sacrifice of clearness is much greater in this second kind, I see no real economy in it, and believe that laziness was generally its immediate cause[1].

I have given a few examples of this change from our own language in the first chapter[2]. I now proceed to give some of its more remarkable operations in Greek and Latin. It affects most (as we should naturally expect) the strongest sounds—as the gutturals—or combination of sound, as e.g. *sum-sit,* causing the insertion of a non-original *p*; or, lastly, such sounds as were especially difficult to a particular people, as the spirants to the Greeks. I take first the passage of the gutturals in both Greek and Latin into the labials or the dentals.

1. *Labialism.*

Change of K to π and p.

This name has been given (first, so far as I know, by Professor Curtius) to the change from κ to π and *p*[3]. He believes the change to have been produced through the influence of a parasitic *u* or *w* (*v*): *k* is the hardest of all consonants, as he says, to pronounce, and requires the most distinct articulation to keep the sound pure from subsidiary breaths. If we pronounce it lazily without fully opening the mouth, the result is that together with it a slight *w*-sound is quite unconsciously pronounced, because the position of the tongue is almost exactly the same for *k* and *g* as for *w*, and if the lips be nearly shut an imperfect labial is necessarily produced: the *k* or *g* is followed by a labial after-sound; a "halbvocalischer labialer Nachklang," Corssen calls it[1]: though the sound is a genuine consonant by the definition given at page 57; the mouth-aperture is so nearly closed that no sound can escape through it without rustling or friction; it has nothing of the pure vowel-sound of *u*. Other imperfect placing of the organs leads to other similar sounds, as *y*, whence arises Dentalism, which we shall next consider.

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[1] See p. 5.

[2] At p. 14.

[3] See *Gr. Et.* p. 45, &c.

Possibility of this change.

In order to make this clear, two points must be proved: first, that *v* (that is, *w*) following after *k* could change it to *p*: next, that the *v* is really almost always adventitious, and not part of an original Graeco-Italian or Indo-European compound. The first must be proved by the exceptions to the second statement. The change from *k* to *p* through an intermediate *kv*, does occur in a few cases where the *v* is probably Indo-European: thus the possibility of it is proved. On the other hand, it will, I think, be made clear by several examples, taken from within the Latin itself, that this *kv* (or *qu*) was commonly later than *k*.

As the first example of original *kv* we may take the often quoted *akva*, "a horse." Here the *va* is the termination: the noun is formed from AK, and the horse is conceived of as "the swift." The *v* is found in the Sanskrit *açva*, the Lithuanian *aszva*, the old Saxon *ehu*[2]. By the side of these and the Latin *equ-os* we cannot doubt that ἵππος stands for ἴκ-Ϝο-ς; especially as the assimilated form ἴκκος is preserved in the *Etym. Mag.*: the ι has sunk from the Graeco-Italian *e*: Here the original *kv* has passed into ππ in Greek. Rather oddly, the same original form must be assumed for the cognate words in many languages denoting water; Latin *aqua*, Gothic *ahva*, and Sanskrit *ap* or *ápas*, the nominative plural, which alone occurs in classical literature: the word does not seem to occur in any simple Greek form; but Curtius conjectures, with great probability, that it occurs in the name Μεσσ-άπ-ιοι[1], the dwellers between the two waters, on the analogy of *Μεσο-ποταμία, Μεθ-ύδ-ριον, Inter-amna,* &c. Even the interrogative pronoun must apparently be added to this list, as having, at least, a secondary form—*kva* as well as *ka*—before the separation: whence come *qui*, the Gothic *hva*, the Sanskrit *ku-tas*, "whence," &c., and, consequently, the Greek *πο* in *πό-θεν, ποῖος* (*πο-yo-ς*), &c.: but that the simpler form *ka* still survived is shewn by its use in Sanskrit and Lithuanian, by the middle Ionic *κόθεν* and *κοῖος*, and by the fact that it was corrupted in a different way to Greek *τίς* and *τε*, which can come from *ka* but not from *kva*. Again, the Latin *qui-es*, Gothic *hvi-la*, would seem also to shew a second form *kvi* by the side of *ki*, whence *κεῖμαι*[2]: the Greek does not help us, as it never took the secondary form. Sanskrit and Lithuanian agree (at least initially) with the Greek in the forms *pańchan, penki*, and *πέμπε*: hence we should infer an Indo-European by-form *kvankan* beside the original *kankan:* the modification of the second *k* seems to be almost confined to Graeco-Italian. Sufficient examples have been given, I think, to shew that *kv* when original could pass into a labial; and Grassmann assumes in every case such a compound for the origin of the change[3]. But these are nearly all the certain examples which can be given of the compound sound occurring in several Indo-European languages; and though useful as establishing the possibility of the transition, they are certainly by far too few to prove that the labial always results from an original Indo-European *kv*.

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[1] I. 76.

[2] *Gr. Et.* No. 624.

Caused by parasitic v.

Next we have to shew that the *v* in other cases sprang merely from phonetic causes, and was not a suffix. This will be sufficiently clear from the cases where *kv*(*qu*) is found in Latin as well as *k*(*c*), compared with the corresponding words in the Greek. Thus we have *sequ-or* by *sec-undus*, *coqu-o* by *coc-us*, *linqu-o* by *lic-et*[1], *torqu-eo* by *torc-ulum*, and many others. And corresponding to all these we find *π* in Greek, as *ἕπ-ομαι*, *πέπ-ων*, *ἔ-λιπ-ον*, and *τρέπ-ω*. If we were left to the Latin we might have supposed that the *u* was added to strengthen the present stem; but this explanation will clearly not suit the Greek. We must conclude that the *v* is parasitic and belongs to the Graeco-Italian time; was retained by the Latin, and indeed often introduced into words which do not exhibit it in the Greek; but in Greek the *kv* regularly passed on to *π*, because the Greeks liked distinct pronunciation, and disliked "irrational" sounds, of which we saw so much in the Latin in an earlier chapter. That the Greek *π* is really the equivalent of Latin *qu* cannot be doubted even from the examples I have given: there are more in which neither language has kept the original *k*, as *πέμπε* (Aeolic) and *quinque*. In other cases the Latin has kept the simple form, whilst the Greek shews the weaker; such are *uoc-o* by Ϝέπ-ος, *oc-ulus* by *ὄπ-τομαι*; compare *√σεπ* in *ἕσπετε νῦν μοι*, Μοῦσαι, with *√sec* in Livius' translation of the first line of the *Odyssey*, "Virum mihi, Camena, insece uersutum[2]:" we have *ὀπός*, but the older form in *sucus*, *ἶπος* but *ico*, *ictus*, *ἧπαρ* but *iecur*. It seems difficult to believe that *βουκόλος* and *αἰπόλος* are not from the same root, i.e. *√col:* and *αἰγι-κορ-εῖς*, with Sanskrit *go-chara*, a cowherd, leads us back to original KAR or KAL: *upilio* and *opilio* shew a *p* again in Latin, or perhaps in provincial Italian[3]. Curtius refers all these terms relating to pasturage to KAR, a root denoting regular motion, and, in a secondary sense, regular attendance upon the herds: the same root, he thinks, gives the agricultural terms *colere*, *colonus*, and Greek *πολεύω*; the religious sense in

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[1] *Gr. Et.* 428.

[2] *Krit. Beitr.* 50.

[3] So also Leo Meyer, I. 29—31.

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[1] *Gr. Et.* No. 625.

[2] Compare also Plaut. *Miles G.* 1220; cum ipso pol sum secuta: which is altered by Fleckeisen to *locuta*.

[3] See Corssen, I. 426.

colere and also in *θεηπόλος*; and the habitual going to and fro of ordinary life in *πέλω, ἀμφίπολος, πωλέομαι, incola* and *inquilinus*. It will be observed in these how strong is the Greek tendency to the labial, and the Latin to preserve the guttural.

Variation in Italy.

This change from *κ* to *π* cannot be called peculiar to any dialect in Greek; it is quite sporadic, occurring to some extent in all. But in Italy the line is pretty sharply drawn; whilst the Latin has only *qu* or the original *c*(*k*), the other Italian dialects often only have *p*. Thus *pid* is Oscan for *quid; pumpe* is Umbrian for *quomque;* "four" is *petora* in Oscan, *petur* in Umbrian; *pomtis* or *pomptis* is "five" in Oscan: and it is interesting to see the provincial names formed from these numerals, as Petronius and Petreius corresponding to the Latin Quartus, Pontius and Pompeius to Quintus: *petorritum* too seems to be simply a "four-wheeler[1]." It is probable that Epona may be a Sabellian form of the horse-deity: also that *palumbes, popina,* are Sabellian in their origin, the Latin forms being *columba* and *coquina;* and I would suggest the same explanation of *saepes,* if it be the Italian equivalent of *σηκός*, and of *lupus,* compared with *λύκος* and Sanskrit *vṛika;* the wolf was not likely to be so formidable in the plain of Latium as in the central highlands, so that the Latin form may have fallen into disuse and been superseded by the Sabellian. Curtius[2] allows here an exception from his ordinary stringent rule, that both sound and sense must agree when we attempt to identify words in different languages. Schleicher with great consistency denies the connection, and betakes himself to the Zend *u-rup-is*[3], and derives both from RUP (LUP), to cut, which seems to me an infinitely improbable conjunction. At all events *p* for *k* was extremely rare, if not wholly unknown, in Latin. *Discipulus* may be (as Leo Meyer suggests) for

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[1] Mommsen, *Unterit. Dial.* p. 287—289.

[2] *Gr. Et.* 78.

[3] To which *lupus* "wol one Zweifel gehört," (*Comp.* 241). Schleicher's mode of writing German corresponds to his subject; it is phonetic, and at first remarkably puzzling.

disci-culus: for *-culo-* is a common suffix and *-pulo-* almost unknown[1]: if so, dissimilation is at least a helping cause.

History of the Latin Q.

The symbol Q, as already mentioned, is nothing but the Greek Ϙ, and was received with the rest of the Doric alphabet from Cumae. So Quintilian speaks of Koppa as "similis effectu specieque, nisi quod paulum a nostris obliquatur[2]." In the same passage, however, it is spoken of as redundant; the reason is, that U was commonly written after it in Latin, to denote the labial after-sound; and therefore practically Q denoted no more than K. But there can be little doubt that Q was retained in the Latin list to denote the middle-sound, which was permanent in Latin, and therefore called for a symbol. In old Latin the U was omitted, at least when another *u* followed: thus we find *pequnia* in the Bantine Law[3] and other inscriptions of the same age, *Mirqurios*[4], *oquoltod* (i.e. *occulto*), &c.; and Corssen points out[5] that this practice was even extended under the Empire, as shewn by these forms found on inscriptions, *qis*, *qaerella*, *neqidem*, &c.: but this probably was only a caprice of grammarians who wished to give the symbol some special use, and never became general. I have already mentioned[6] that when *o* after *qu* passed in the regular course of weakening into *u*, *qu* was again written as *c*, in order to avoid the *uu*, as *cum*, *locuntur*, *ecus*, &c. When the Italians, who did not possess the symbol, borrowed a Latin word in which it occurred, they transliterated it by *kv*; thus *kvaisstur* is Oscan for *quaestor:* the Greeks denoted it by κου as Κουιρῖνος, by κο as Κοίντος, and *qui* by κυ as Ταρκύνιος[7]. The Latin grammarians seem to have perfectly understood the nature of the symbol QU, when they decided that the U was neither a consonant nor a vowel:

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[1] The instances given by Roby (*Grammar*, § 860) seem to be rather compounds than derivatives: e.g. *manipulus* is clearly from $\sqrt{}$*pul* (*ple*). For *simpulum*, see Corssen, II. 72.

[2] I. iv. 9.

[3] Mommsen, *Corpus*, No. 197, p. 45.

[4] *Ib.* No. 59.

[5] I. 72.

[6] See p. 286.

[7] Corssen, I. 74.

it was not a consonant, because in that case the *e* in *equites* must have been long; it was not a vowel, for that would have lengthened the second syllable by crasis with *i*. In other words, the U was merely a symbol, expressing further and somewhat unnecessarily the indistinct after-sound which made Q different from K. This sound, as I have said above, was liked by the Latins, and therefore they retained the koppa. The Greeks did not use the sound, and therefore soon dropped the symbol which they had taken from the Phoenician alphabet; it could never have been of use to them, for there is no trace of any period in Greek during which *κ* was passing into *π*: the transition would seem to have been immediate. It is this transitional sound which the Latin Q represents; only the transition was never accomplished in Latium, though it was in the rest of Italy[1].

Change of G to β and b.

Exactly analogous to the change from K to *π* and *p* is that from G to *β* and *b*; and here also we have the middle step denoted by the Latin *gu*. Here too the *u* is not parasitic in every case; thus in *pinguis* the *u* is a suffix, found in *παχ-ύ-ς*, and a new suffix has been added in the Latin; similarly in *breuis* for *bregh-u-is* (*βραχ-ύ-ς*[2]). But it is parasitic in *tinguo*, the Greek *τέγγω*, in *urguere*, where the language has presented the simpler form *urgere*, &c.[3] Rather frequently the *v* has forced out the preceding *g*, and thus given rise to an apparent strengthening; in reality there is a loss. Such cases are *uiuere* for *guig-u-ere;* compare the old Norse *kvik*, our old English "quick," and Sanskrit *jîv*[4]; *bre*(*gh*)*uis*, &c. mentioned above; in these the *v* is original. In *fruor* for *frugu-or* (*frug-es*) both *g* and *v* have fallen out. The Latin words so far have no Greek equivalent which shews any corresponding change. But answering to *uor-are* for *guor-are* (Indo-European GAR) is Greek *βορ-ά*, where the guttural has passed into the labial: *(g)uen-ire* is in Greek *βαίνειν* for *βαν-yειν*, and the original guttural is kept in Gothic *kviman*, our "come." The Latin, on the other hand, shews no change in *grauis*, where the Greek has *βαρύς*: but the Sanskrit is *guru*, so the *u* may be original, or at least there may have been a by-form *guar;* and in the Greek itself we have the Boeotian *βανά* by the side of *γυνή*, shewing that the old form must have been *γυανᾱ*, our "quean[1]." Curtius is probably justified in assuming an original *g*, where *β* is found in Greek, in the word *βαθύς* with which he compares the Sanskrit √*gâh* (doubtless originally *gâdh*)= to dive into: in *βία*, compared with Sanskrit √*ji*, to conquer, and in *βίος*, compared with *jyâ*, which may belong to this root: so also √*βαλ* may be Sanskrit (and original) √*gal*, found in German *quelle*, a fountain. Perhaps the only undoubted case in which both Greek and Latin have the labial is the certainly Graeco-Italian *bov-*, "a cow:" here all the other languages have the guttural; the Sanskrit is *gâus*, the German *kuh*. These examples are sufficient to shew that the *v* is less frequently a mere Graeco-Italian sound after *g* than after *k*, as might have been expected from *g* being a softer and easier sound: but it certainly was so in some cases; and, whether original or parasitic, it equally had the power in Greek of turning the guttural into a labial. The Italians seemed to have stopped at *gu*, as the Latins did at *kv* (*qu*).

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[1] In the few Doric inscriptions where ϙ is found, it is generally followed by *o*, see Ahrens, II. 88, and *New Cratylus*, p. 190. This seems to be an attempt, similar to the Latin, to express the after-sound more clearly.

[2] Corssen, I. 85.

[3] *Krit. Beitr.* 65, &c.

[4] I think that Corssen is right in thus explaining the word (*Krit. Beitr.* 72), as opposed to Curtius, who treats the *g* itself as parasitic (*Gr. Et.* 547).

25—2

Change of GH to φ.

The same cause may account for the rare change of the guttural aspirate in Greek. It becomes *φ* in *νίφ-ειν*, from the original root SNIGH[2]. Perhaps also *ἐλαφ-ρός* may exhibit a weaker form of the base which we see in *ἐλαχύς*: the *v* is there, which in Latin *le(gh)u-is* has been strong enough to eject the guttural altogether. I have already mentioned the not unfrequent change in Latin from *gh* to *f* in my account of the Latin Aspirates[1], and said that the same explanation is possible; it rests principally on analogy, there being no middle step preserved by the Latin, as in the case of the unaspirated gutturals. It is also possible that the change may be due to greater strength being given to the breath which is the second member of the compound: in this way the distinction between the initial momentary sounds would tend to become obscured: though this result was very rare in Greek, and not very common even in Latin. It is common enough, as has been already mentioned, in English at the end of a word, as *laugh*, but still more commonly the sound is lost altogether, as in *though* and (medial) in *light*, &c.

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[1] See page 109.

[2] See p. 132.

2. *Dentalism.*

Change of K to τ.

This change from κ to τ is much less frequent in Greek. In Latin it does not seem to occur, except in the late transition of *-cio* into *-tio*, &c.[2], which is caused by the *i* being really a semi-vowel when another vowel follows; in these cases it is of course part of the suffix. So also was the *ιο* (*yo*) in Greek, which we saw produced so much change among the Greek verbs; as, for example, *πρακ-yω* became *πρατ-yω* and *πράττω*. These examples are quite enough to shew that *y* really has the power of turning a guttural into a dental: and justify us in assuming a parasitic *y* in cases where the change has happened in Greek without any suffix to explain it: especially when traces of the same action are discernible in the cognate languages. An undoubted middle step is given by the Sanskrit palatal *ch*, which is pronounced half-way between the guttural and the dental, and was probably caused by an attempt to sound *k* without bringing the tongue far enough back, so that the organs are partly in the position for sounding *k*, partly in that which produces the palatal breath *y*, which therefore slips out involuntarily after the imperfect *k*, and the whole result is *ch* or, perhaps more commonly, *tsh*, where we pronounce the *t* very quickly. In the examples which I am about to give from the Greek, the *y* does not seem to have been very fully heard, though it had the power to change the *k* to τ and then fell out: so that the order of sound was κ, κ*y*, τ*y*, τ[1]. In the verbs and nouns mentioned under the head of Assimilation, where the *y* was part of the suffix, it left a permanent trace of itself in the doubling of the consonant. This difference of result in the cases where the *y* was radical, and where it was only parasitic, is, I think, no more than we should expect.

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[1] See p. 337. More examples (not all very certain) are to be found in Corssen, *Krit. Beitr.* 203—226.

[2] See p. 375.

The certain examples in Greek are not very numerous, and have indeed been mostly mentioned before. Thus τέσσαρες, and Sanskrit *chatvâras*, are instances of Dentalism, though we saw that the Italian dialects gave us the labial in the same word. These numerals were of course peculiarly liable to corruption: they are almost the commonest currency of language: from their being necessarily used in barter, they are liable to foreign influence more than any other words: a fact which may be the key to the perplexing agreement of numerals in totally distinct languages, and to the strangely-altered forms of some of the Sanskrit numerals. This numeral, *katvar*, of the Indo-European had apparently two separate indistinctly pronounced forms before its separation, *kyatvar*, whence τέτϝαρες, and *kvatvar*, whence *quattuor*: unless we rather believe that these weakenings took place after the ultimate separation, and so the agreement of τέσσαρες and *chatvâras* would be accidental: if this be so, as is on the whole probable, we must still assign to the Graeco-Italian the double form *katvar* and *kvatvar:* from the second we have the Latin *quattuor,* and an old Greek *πέτϜαρες,* whence the Boeotian *πέτταρες* and the dubious *πίσυρες,* with which the Umbrian *petur* and Oscan *petora* also agree: the first form does not appear pure in either language; but the Greek alone dentalised the *κ,* and arrived through *τετϜαρες* at the Attic *τέτταρες* or *τέσσαρες* and the Doric *τέταρες,* where the *α* has been dropped and the Ϝ vocalised: the Latin shews no *t.* Just the same variety of the Greek and Latin forms is seen in *τίς* and *quis,* where the Sanskrit has the original *k* in *kis;* parallel however to *τε* and *que,* which are probably from the same base, the Sanskrit has *cha,* corresponding again to the Greek. Lastly, *τί-ω* corresponds generally to Sanskrit √*chi,* so that here also we have probably an instance of dentalism: no Latin word can be connected with these: for that *timeo*[1] belongs to the same family seems unlikely both from its meaning and from the *t,* for there is no evidence of the *t* occurring for K in Latin: both *τίω* and *chi* have many meanings, but the radical idea seems to be to "search," and then "tell over," "count;" and so in Greek "to estimate," "honour;" in Sanskrit to "collect." These forms are all which are given by Curtius as certain[2]: and he observes that in all of them the original *k* was followed by either *ι* or the cognate *ε*; a fact which would very much assist the slipping-in of the parasitic sound.

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[1] See p. 14. If the Norse *fjord*, *fjeld*, &c. are examples of the same principle, it would appear that the y-sound can slip in, even after labials.

Change of G to δ.

The change from G to δ is exceedingly rare and uncertain, occurring mostly in isolated dialectical forms. Curtius, however, explains, though somewhat doubtfully, by this process the verb *ζάω,* as being for *διάω* by the regular process of Greek assimilation[3]. This *δι* he would connect with GI, the simpler form of the old root which appears lengthened, but also dentalised in Sanskrit, as √*jīv,* and probably labialised in Greek, as √*βι*Ϝ in *βί*(Ϝ)*ος,* &c. If it seem odd that the same root should have been both labialised and dentalised in Greek, so as to produce the dissimilar forms *βιόω* and *ζάω*, this is no more than certainly took place in the interrogative pronoun: from which come the two Greek derivatives *τίς* and *ποῖος*. The probability of the derivation is increased by the form *δί-αιτα*, where the *δι*, perhaps through the influence of the following diphthong, has not been affected. Some cases where *γ* passed into *δ* by assimilation have been already mentioned. The excessively rare change of GH to *θ* has been already accounted for on a different principle to that which we are now considering.

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[1] Benfey, *Sk. Lex.* s.v. *chi.* [2] *Gr. Et.* 442, &c. [3] See p. 367.

Change of D to b.

There are in Latin one or two well-known examples of the transition from D to *b*. These are *bis*, the older form *duis* (which is also the Sanskrit form) being given by Festus[1]: here the *u* is part of the root, and is seen in *duo*, *duplex*, *du-bius*, &c. Again, the old form of *bellum* is *duellum* "division:" *duellatores* occurs even in Plautus[2]: and *bonus* was originally *duonus*, already quoted as occurring on the epitaph of Scipio. Here the *u* may have been either radical or parasitic; the derivation is uncertain. Corssen (*l. c.*) thinks that it was "irrational" for all, which seems very improbable. But there can be no doubt that in all the *w*-sound assimilated the *d* to *b*, and then passed out, or combined with it, as Corssen prefers to explain it. I know no certain examples in Greek where *δ* standing alone passes into *β*: Curtius mentions some very dubious ones[3]. The cases where *δ* becomes *β* through assimilation are rare, but quite different to the others.

3. *Parasitic d before y or i.*

This peculiar change has been for the first time thoroughly investigated by Curtius[4]. I think that some of his conclusions are doubtful, and particular points have been assailed by different critics. Of the main principle however I think there can be no doubt, though it may be wrongly applied in special cases. I will give the main results to which Curtius comes and the commoner examples: those who wish to see the further evidence supplied by uncommon forms and glosses must find it in his own pages.

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[1] Corssen, I. 125.

[2] *Capt.* 68.

[3] *Gr. Et.* 440.

[4] *Ib.* 569, &c.

The apparent change of Y into ζ.

We saw that *δy* could frequently change into *ζ* in verbs, where *δ* was the termination of the root, and *y* the initial letter of the suffix: *y* passed into the weak dental spirant *z*, by assimilation, and thus for *δy* we had *dz*, that is, *ζ*. So *φραδ-yω* became *φράζω*: and there are numerous examples of nouns where the same change took place. Thus *Ζεύς* was for *Δyευς*, from DIV or DYU: *διά* became *ζά* in the Lesbian dialect[1]: *Ζάκυνθος* may be *δι-ακανθο-*, "the thorny island[2]," on the analogy of *διανθής*, *Διακρία*, &c.[3]: and the same form *ζα* is found as an intensive ("through and through," "thoroughly") commonly in Greek, as *ζάθεος*, *ζαμενής*, &c. Again, *πεζός* is *πεδ-ιος*: *ἀρίζηλος* is *ἀρι-δyηλος*, perhaps, as Curtius suggests, for *ἀρι-διϝ-ηλος*; *ῥίζα* is *Ϝριδ-ya*, &c. In all these examples the *δ* is radical, and the *ζ* therefore to be expected. But how are we to explain forms like e.g. *ζυγόν*? This is from YUG, and all the cognate languages give us *y* or its regular substitute. It seems impossible to avoid the conclusion that this *ζ* is another variation from original *y*, another attempt to avoid the disagreeable sound which resulted in a weak *δ* being heard before it: *ζ* therefore, that is, *δy*, is not a substitute for *y*, but the combination of *y* with another involuntary sound. Here the fact is undoubted, and the explanation seems to me the best possible. The *δy*, according to Curtius, passed into different forms, which I will give in order.

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[1] So *ζὰ τὰν σὰν ἰδέαν*, Theok. XXIX. 6: see Ahrens, I. 45.

[2] We might compare "Thorn-ey" near Ely, but perhaps Thorn is here the proper name which occurs so often in the North of England, e.g. in Thorn-by, Thorn-thwaite.

[3] *Gr. Et.* 564.

Y with parasitic δ appears (i) *as ζ;*

(i) *δy* appears as ζ: in ζυγόν, in ζεά or ζειά, the Sanskrit *yava*, in ζημία from YAM, which occurs in Sanskrit in the general sense of "restraint:" a regular substitution from the same root gives us ἥμερος, and it is not impossible that ἡν-ία may be from the same root by the change of μ to ν, though there seems no special reason for it here. Again, we have *δy* as ζ in ζωμός and ζυμή, compared with Sanskrit *yûsha* and Latin *ius*. In none of these is there radical δ; which therefore must be supposed to be produced involuntarily. The connection of ζέω (√ζες) with Sanskrit √*yas* (= to struggle) seems to me uncertain from the absence of any trace in that language of the simple meaning found in ζες. So also ζητέω, which is commonly connected with Sanskrit √*yat* (to exert oneself), is better referred by Curtius and W. Christ to a secondary √*yât* from *yâ*, because of the length of the vowel: but in either case the ζ is the result of *δy*. Next Curtius explains in this way with great probability the double verb-forms in *αζω* and *αω*, &c. I have already often mentioned that *αω* is a modification of original *aya* or *ayo*, the *y* having fallen out: but it is quite possible that before it fell out it may have engendered a preceding δ from the neglect of clear pronunciation: thus *ἀντι-αyo-μι* would become *ἀντι-αyω*, and on one side *ἀντι-άω*, on the other *ἀντι-αδyω* or *ἀντιάζω*. This etymology seems to me peculiarly ingenious, and will explain all cases where the double form occurs: though in some of course it is possible that the δ may be radical, as λιθάζω from λιθαδ-. It also explains the numerous verbs in *ιζω*; thus *ὑβρίζω* is *ὑβριδyω* from *ὑβρι-yo-μι*: though in a few of these also the δ belongs to the base, as in ἐλπίζω from ἐλπιδ-.

(ii) *as δι;*

(ii) *δy* takes the form of δι. This is principally in the termination -διο-, which is not of very common occurrence; it appears in ῥηί-διος, ἀί-διος from ῥεῖα and ἀεί respectively; in both the combination of vowels would be difficult to sound, before the termination *yo* or *ιο*, and hence, according to Curtius, the parasitic *δ* arose between them: wherever -*διος* occurs it is always preceded by a vowel. It forms adjectives from some roots under the like condition, as *σχέδιος*, *ἀμ-φά-διος*, *στά-διος*, &c.[1] Curtius combines with these the form *ἴδιος*, as the possessive pronoun of the third person for *σϜέ-διος*, through *Ϝιδιος*: the weakening of the *ε* to *ι* might be explained by assimilation, as in *σφίσι* for *σϜε-σι*. This derivation is very probable: but the *δ* might be part of the root which probably ended in *d* in Graeco-Italian, if we may judge from *med* and *ted*, which are accusatives as well as ablatives in Plautus[2]: also the Sanskrit adjectives are *mad-îya* and *twad-îya:* and so Bopp explains it. Benfey regards all the terminations in -*διο* as weakened from original -*τyo*.

(iii) as δε;

(iii) *δy* appears as *δε*. This is limited again to a few nouns in -*δεος*, as *ἀδελφί-δεος*. Certainly here at least the *δ* does not belong to the base: though here also we might assume an original suffix *tyo*.

(iv) as δ.

(iv) *δy* loses the original *y* and only the parasitic *δ* is left. This is more certain than the last two cases; at least in dialectical forms, as the Boeotian *δυγόν* for *ζυγίν*, *ἱεράδδω* for *ἱερ-αδyω* or *ἱερ-αyω*. The occurrence of *δυγόν* beside *ζυγόν* and the Latin *iug-um* seems to me to make the evidence for the theory complete in that case. This involuntary *δ* is further assumed by Curtius in several dubious words. Such are the particle *δή* which he explains as originally (*δ*)*yā*, from the pronominal base *ya*, so that the meaning would tally with that of the German "ja," our "yea:" *ἤδη*, as he thinks, stands to *δή* as *ἦ μήν* to *μήν*. Corssen[3] connects *δή* and *δήν*, and also the Latin suffixes -*dum*, -*dem*, -*do*, &c. with the base *div* "a day," I think less probably: though *diu* is certainly from that base and means originally "all day." In such forms as these the derivation must be always uncertain; there is no necessary correspondence as to meaning to guide us, and the words, being common, have probably suffered so much from use that their original form also must be guessed at. Curtius explains in the same way the rather numerous adverbs in -*δον*, -*δην* or -*δα*[1], which he regards as originally cases from adjectives in *ya*, with parasitic δ, like those which end in -*διος* or -*δεος*, except that here all trace of the *y* is lost. Thus we have *σχεδόν* by *σχεδίην*[2]: *κατωμα-δόν* by *κατωμά-διος*: and the variation between *ἄδην* (or *ἅδην*) and *ἄδδην* would be explained by an original form *σα*-(δ)*yην*, where the *y* either fell out without trace, leaving the preceding vowel short, or after lengthening it[3], or finally was assimilated to the δ, as in *ἱεράδδω* (see last page). Similarly the suffixes -*δε* and -*ζε* would be explained as modifications of (δ)*ye* from the pronominal root *ya*. The verbal suffix *ya*, added to √*μερ*, gives as the regular form *ἀμείρω* (the *a* is prosthetic); but there is the parallel form *ἀμέρδω* in Pindar, where the δ seems due to the original *y*: in this, however, and some other similar cases it is possible that there may have been a secondary root ending in δ. Since *ὀπαδός* can hardly be separated from *ὀπάων* and *ὀπάζω*, it seems better to suppose that the nominal suffix *ya* engendered the δ, rather than refer it to √*pad*, whence come *πεζός* and *pe*(*d*)*s*; though this would suit the sense well enough.

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[1] *Gr. Et.* 578. [2] E.g. *Aul.* 120. [3] *Krit. Beitr.* 500.

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[1] *Gr. Et.* 592.

[2] *Il.* v. 830.

[3] This, without doubt, is the explanation of *κᾱλός* and *κᾰλός*, *ῑσος* and *ῐσος*. These double forms were produced side by side in a transitional period; each survived in the language, and therefore there is nothing strange in our finding both even in the same line (as Theok. VI. 19; VIII. 19). Similar variations in Latin are not so easy to explain: a great list is given by Lachmann (on Lucr. I. 360) but with no explanation: see also Munro on Lucr. IV. 1259. In the common cases such as *nīger*, *nĭg*(*e*)*ri*, no doubt, even after the *e* was omitted in writing, enough of its sound was retained in the *r*, to allow the root-vowel to be pronounced short or long. In *pūsus*, *pŭsillus*, &c. the cause is clearly accent. Lastly where the same word occurs both long and short, e.g. *cōturnix* and *cŏturnix*, *uiētus* and *uiĕtus*, &c., I think that in nine cases out of ten the change is from long to short: so that the new form would represent that regular weakening of the ordinary Latin of which I have said so much. But there are other cases which cannot be so explained.

Lastly, the same involuntary *δ*, which has expelled its parent *y*, is assumed by Curtius to explain patronymics in -*δα*, names of beasts in -*δευ*, nominal bases in -*αδ*-, and -*ιδ*-: that in these last the *δ* was no essential part of the suffix is proved, he thinks, by the double forms, e.g. *μήν-ι-ος* and *μήν-ιδ-ος*, *σφράγιν* and *σφραγῖδα*, &c.: he believes the suffix *ι* to have been originally long; it then necessarily parted into *ĭy* before case-suffixes beginning with a vowel, as is regularly the case in Sanskrit (e.g. *bhî*, *bhĭy-as*); and so, as elsewhere, a *δ* sprang up before this *y*.

Estimate of the probability of these changes.

These are the principal cases in which Curtius assumes his parasitic *δ*. Corssen controverts some of his results[1], not, I think, on very strong grounds: first, because such a *δ* could not have arisen after a consonant, e.g. in *γραβδην*, *φύρδην*, &c.; I am not sure of this; besides, such words might be formed on the analogy of others; there can be no doubt that *δην* (whatever its origin) established itself as an independent suffix: secondly, because the forms in -*διην* may be formed from *δο* with the secondary suffix *ιο*: thirdly (and this is the strongest argument), that these Greek formations cannot be separated from the Latin adjectives in -*do*: and that forms like *ἐλπί*(*δ*)-ς, *φυγά*(*δ*)-ς, are parallel to *lau*(*d*)-*s*, *here*(*d*)-*s*, &c., Κρονίδης to *Alf-id-iu-s* (beside *Alfius*). It is quite true that there is no trace of the generation of *d* before *y* in all classical Latin; but, if these formations be really identical, and not (as seems to me quite possible) the result of independent processes in the two languages, it cannot be said to be impossible that such a principle may have been in operation in Graeco-Italian, and afterwards checked altogether in Italian. We have seen that a certain weakness of the *d*-sound belongs to the Latin as much as to the Greek: and such a weakness leads to the wrongful insertion of a sound in some places, as well as to its omission in others.

The strongest argument for Curtius' view is well stated by Schleicher[2]: "In the stem-formations of the Indo-

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[1] II. 305.

[2] *Comp.* 216.

Germanic, *y* is an extraordinarily common, *d* is a rare element, so that there is hardly another possible way of bringing these Greek formations into harmony with those of the kindred languages." This consideration must at least prevent us from regarding the assumption as merely arbitrary: and it is much more improbable that in every case δ should be weakened from τ, a weakening for which the Greek shews no special liking. The argument brought against the theory, that it is improbable that one and the same sound should appear in so many different forms, is answered, I think, with great force by Curtius. He says[1]: "The less we regard as probable an isolated deviation with no apparent reason from the path of regular substitution in the case of those sounds which remain to all time in common use in a language, so much the more decisively may we allow sporadic variation for those sounds in it which we perceive to be from the very beginning vanishing out of it." Such a sound is especially *y* in Greek: in the earliest records of the language we find only the imperfect substitutes for it: and it is certainly not improbable that at a yet earlier period, when it was still heard, the imperfect attempts to pronounce it may have produced by its side a letter which is itself indistinctly sounded in Greek, and so in process of time, out of these two indistinct sounds, one distinct sound may have arisen. At all events, as Schleicher prudently sums up, "what every one allows in some cases (*ζυγόν*, *δυγόν*, and χθές for *ghyas*) is also possible in others[2]."

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[1] *Gr. Et.* 580.

[2] The instances of the same process in modern languages are well known: e.g. Ital. *diacere* for *iacere*, &c.; see Curtius p. 569, note; Ferrar, p. 85. The *d* heard before an English *j*, e.g. in John, is nearly parallel; and supplies the strongest argument for supposing that ζ had that sound. See page 368.

4. *Parasitic y.*

Parasitic y after δ.

This is principally found after δ, and therefore produces the same results as parasitic δ before original *y*; but they are much fewer, for *y*, a sound difficult to a Greek, was not very likely to spring up involuntarily, and clearly could only do so in that early prehistoric time when *y* had not yet vanished out of the language; so the traces of it are few. It seems to occur in *ζορκάς*[1], the dialectical form of *δορκάς*, where the δ is original; and, rather oddly, in the same word the *y* seems to have expelled the δ and then vocalised itself, for we have the third form *ἴορκ-ες* (nom. plur.) in Hesychius[2]. On the strength of a gloss in Hesychius, *δείκηλα, εἰκόνες*, and the form *δείκελον*, which occurs[3] in this sense, Curtius believes that the original form of the common *√ικ*, whence *εἰκών, ἔοικα, ἴκελος*, &c. was *δικ*, which produced a parasitic *y* and then vanished; so that *οὐδὲ ἔοικεν* in Homer should be scanned *οὐδὲ yέyοικεν*, not *FέFοικεν*: this I think is very probable, for there is nothing in the cognate languages to justify a digamma in the word. That δ can fall out before *ι* (*y*) seems clear from the well-attested *ἰωκή* (*√διωκ*), where, as Curtius has pointed out, the *ι* is certainly radical: this loss is only a further extension of the corruption of the dentals which turned *διά* into *ζα*. It is not necessary however to assume that *ἰαίνω* is for *διαίνω*[4]. Lastly, as *δy*, where the *y* was radical, was sometimes assimilated to δδ, so here also we may explain the peculiarities connected with *√δι*, "to fear." Thus *ἔδδεισεν* is frequent in Homer, and frequent too is the lengthening of a previous short syllable, as *μέγα τε δεινόν τε*[5], and *οὔτε τί με δέος ἴσχει*[6]. These become quite intelligible on the supposition that *y* was produced involuntarily after δ, so that δέος was δyεος: and so we need not suppose that ἐ̆δδεισεν is a merely mistaken formation, like ἐ̆μμαθε, &c.[1]: the fact that this apparent metrical license is not confined to the verb, but is found also with the nouns, speaks strongly for some real sound being heard after the δ[2]. Further examples (not perhaps equally certain) may be found in Curtius[3].

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[1] Herod. IV. 194.

[2] *Gr. Et.* 607, &c.

[3] *Anth. Pal.* v. 260.

[4] As Geldart does, p. 82.

[5] *Il.* XII. 10.

[6] *Il.* v. 817; *Gr. Et.* 607.

5. *Aspirating unaspirated letters.*

Involuntary aspiration of hard letters; found in Sanskrit and in Greek.

This takes place to some extent in Greek. The new *h* is clearly parasitic, when it is initial; when it occurs in the middle of a word (almost exclusively after hard sounds) it might be regarded as merely a case of substitution; for the aspirate, as has been already said, is a weaker sound than the unaspirated letter: it arises from the stoppage being so short that a portion of the breath has not been appreciably checked; and so it makes itself heard after the check is removed. But I have preferred to treat of the whole subject together: though some of these cases have been mentioned incidentally in the account of the Greek aspirates, the theory of their origin is considerably confirmed by the occurrence of this involuntary aspiration. A similar phenomenon is found in Sanskrit; and it may sometimes happen that the same word has been aspirated in the two languages. But there can be little doubt that such coincidences are accidental, and that each language pursued its own course separately in this respect. The aspirates thus found in Sanskrit corresponding to the Greek are always hard ones.

The commonest cause of this parasitic *h* is the influence of an adjoining liquid or nasal, or a preceding σ[4].

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[1] See Curtius, *Erl.* p. 46; and above, p. 346.

[2] Benfey however (*G. W.* II. 224) supposes the root to be DVI connected with δυο, whence Sanskrit √*dwish*, to hate.

[3] *Gr. Et.* 604, &c.

[4] *Gr. Et.* 456.

Thus we find *φροῦδος* from *πρό*, *ἐπίβα-θρον* instead of the common suffix *-τρον*, with *κλεῖθρον*, *λύθρον*, and some others: the fact that we have sometimes *τρον* and sometimes *θρον*, with no apparent reason for the difference, shews how thoroughly sporadic the change is. We have *τέφ-ρα* from *√tep*, whence Latin *tep-eo;* the Sanskrit keeps original *a* in *tapas: λύχ-νος* from *λυκ-*, *ἐξαί-φνης* from *ἐξαπίνης*, where the nasal is the cause; so also *ἔγχος*, (where the nasal seems to be intensive, as the root is probably AK,) *αἰχμή* from the same root, *τέχνη* from *√τακ*, *ῥύγχος* but *ῥέγκω*, *ὀμφ-ή* from *√Ϝεπ*; and several others given by Curtius (*l. c.*). The spirant has acted in *σχίζα* from *√skid*, Latin *scindo;* probably in *σθέ-νω*, if this be a strengthened form of STA, which in Sanskrit becomes *√sthā;* in *σχελίς* by *σκελίς* and *σκέλος*, *σφυρίς* by *σπυρίς*, and many others. The form *σφαλ* has been already discussed at length.

In other cases it is not easy to assign any further cause than mere laziness; which operated of course irregularly, but yet affected some words permanently. Such are *βλέφ-αρον*, *σοφός*, and *σαφ-ής*: the two latter are from *√sap*, in Latin *sapio*, &c. Curtius rejects Benfey's explanation that the *h* may be caused here by a *v*; that *βλέφαρον* is for *βλεπ-Ϝαρο-*, for *-vara* is at least a Sanskrit suffix; and *σοφός* is similarly for *σοπ-Ϝο-ς*: it seems to me not improbable, at least for the first two, and *σαφής* may have been formed on the analogy of *σοφός*. I know of no reason for the certain change of *√δεκ* into *δέχ-ομαι*, *√τυκ* into *τεύχω*, of *√πτυκ* (from original *√πυκ*) in *πτύσσω* into *πτυχή*. The change of the labial is much more common; thus *ἄφ-ενος* is the Sanskrit *ap-nas*, which is Vedic, but occurs in *apnas-vant*, "efficacious[1]," and the Latin *op-s*, &c.; contrast *in-ops* with *apnas-vant; copia* is *co-opia*[2]. From *√λιπ* comes *ἀ-λειφω*, from *√σκαπ σκάφος*, and *τρέφω* may be only a secondary form of *τρέπω*: further examples may again be found in Curtius.

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[1] Benfey, *Lex.* s.v.

[2] *Gr. Et.* No. 653.

No certain example of the aspiration of soft sounds.

There is no certain example of this *h* being produced after a soft explosive sound. Several possible ones are discussed by Curtius[1]. But for all of them I think other explanations are possible. Thus *ῥαχία* certainly need not be connected with √Ϝραγ (*ῥήγνυμι*), it being quite possible, as Curtius suggests, to class it with *ῥήσσω* (*ἀράσσω*), which imply a *κ*, or even with Hesychius' gloss *βράκιαι οἱ τραχεῖς τόποι*. Curtius seems to allow the change in *παχύς*, which he combines with *πήγνυμι*, *πηγός*, *πάγος*, &c. But here also we have seen that the older form of the root is *πακ*[2]: so that *παχύς*, *πάχ-νη*, &c. may be formed by aspiration directly from this original form.

All these aspirated words must be kept distinct from those where the aspirate is original; they may be known by the fact that the aspirate (or the regular substitute) occurs in none of the cognate languages, except in some few cases in the Sanskrit, which shared with the Greek these peculiar hard aspirates.

Aspiration in Greek and Latin at the beginning of a word.

In Latin, where the aspirates had early vanished, no change of the sort was likely to take place. But both in Greek and Latin irregular aspiration at the beginning of a word seems to have been known. I have already said that this is possible among people who are in the habit of leaving out the breathing where it ought to occur at the beginning of a word; and both Greeks and Romans were in the habit of doing this. Different as was the origin of *h* in the two languages, it is quite certain that the letter was rapidly vanishing in each of them at the classical period of their literature, or even earlier; and the tendency has gone on increasing among the inheritors of these languages, till, for the modern Greek at least, the sound is utterly lost, while the Romance languages have partially preserved it, with great irregularity of usage. Still, there is also an unmistakeable tendency to introduce the breathing where it ought not to be, as distinct though less frequent in its operation than the other. First, in Greek, apart from numerous plain errors on inscriptions, such as *ἅγειν, ἑπί, εἵς*, &c.[1], we may observe a strong inclination to aspirate an initial *υ*; e.g. in *ὕδωρ, ὑπό, ὕστερος*, &c. where it is certain that there was no aspirate in the original language. This seems to me very natural: it is more difficult to pronounce *u* pure than any other vowel, in consequence of the extremely narrow passage for the sound through the lips: witness our English *u* before which a *y* is regularly heard: and we have already seen that the Greek *υ* was probably a modified *u*, something like the German *ü*: for which sound the breath is even more intercepted than for *u*, since the tongue approximates more nearly to the palate, being in the position for *i*[2]: it is true that we should rather have expected *y* than *h* before the *υ*; but we have already seen that initial *y* regularly passes into *h* in Greek: and in exact accordance with this theory the Boeotian, which keeps the old sound, and denotes it by *ου*[3], keeps the proper smooth breathing; e.g. in *οὐμές, οὔδωρ*, &c.[4]: although in other words the Boeotians were by no means peculiarly averse to the rough breathing, even inserting it in words where it was absent in other dialects, as *ἵων* for *ἔγω*. The Aeolic, however, in the main inclined most to drop initial *h*: the Attic retained it most, and also used it most often wrongly; thus the Aeolic keeps *ἄμμες* for *ἀσμές*, while the Attic aspirates, as *ἡμεῖς*. I agree with Curtius here in regarding the rough breathing as a simple mistake, on the analogy of *ὑμεῖς*, where it denotes a lost *y*[5], rather than suppose that it is due to the *σ* passing into *h*, as *ἀhμες*, and then becoming misplaced: as he says, the *σ* does its part in lengthening the preceding vowel, and therefore would have exerted a double influence if it had become the breathing as well. But I think the theory more probable in the case of *ἧμαι*, from AS, as I have already said[6]; and some other words, as *ἱερός*

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[1] *Gr. Et.* 466, &c.

[2] See p. 223.

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[1] *Gr. Et.* 617.

[2] See page 87.

[3] See p. 248.

[4] See Ahrens, I. 169.

[5] *Gr. Et.* 642.

[6] See p. 323.

&c., and the corresponding Spanish forms *esperanza, estrella,* and *estava* (=*stabat*): and a vowel similarly prefixed occurs in the late Latin of the fourth century after Christ, as *ispirito, istatua.* Compare also the Welsh *ysprid* for *spiritus, ysgol* for *schola,* and many others. In these words the *y* (which seems to me to be the neutral vowel in Welsh) is really irrational; it hardly amounts to a syllable, and so is clearly auxiliary only.

But it is not easy to see why this use should be extended to words which do not begin with a compound sound, but only with an easy letter like λ or ρ, μ or ν: and it is especially before these that this inorganic vowel is found; it occurs very rarely before a simple explosive sound; before τ, π, φ never[1]. But the reason for this difference is not far to seek; a protracted sound has something of the vowel-character about it, and therefore a vowel can easily slip through the lips before it[2]: in sounding the four letters *l, m, n* and *r* especially, the vocal tube is so open that it is easy to let a pure vowel-sound escape at some part of the time during which they can be prolonged. But before a momentary sound the vowel must have been consciously added. Accordingly I believe that this new parasitic sound sprang up before certain liquids and nasals after it had been familiarised to the "Sprachgefühl" by use in cases where it was almost necessary. I do not deny that in some cases a prefixed vowel may be not parasitic, but the remnant of some corrupted prefix, most naturally of a preposition: and this, as might be expected[3], is often assumed by Prof. Pott: e.g. he regards ἀμέργω as ἀπομέργω, like ἀπομάσσω, &c.[4]. I do not think this likely, because I know no analogy for a similar loss of π; but in some cases such a truncation is doubtless possible. Still in the great majority of cases I have no hesitation in regarding the vowel as the purely phonetic result of indolent articulation.

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[1] *Gr. Et.* 678.

[2] Compare the irrational vowels in Latin, *u* before *l*, and *e* before *r*, pp. 276—286.

[3] See pp. 105—107.

[4] *Et. Forsch.* II. 386.

(i) *Initial vowels.*

I will give examples first of the vowel when initial[1]. Several have been incidentally mentioned in the previous chapters. Thus *ἀ-στήρ*, as we saw, is from STAR: whence also *ἀστράπτω* and *ἀστραπή*: to derive them from a root AS, "to throw" (which occurs in Sanskrit, but not, I think, in the other languages), is not so good. Similarly *ἀ-σπαίρω* is an easier form of *σπαίρω*: *ἄ-σφι* is a Lesbian form of *σφί*: *κίς* and *χθές* have the by-forms *ἰκτίς* and *ἐχθές*: the rare word *ὄ-τλος*[2] seems to be most naturally connected with *√τλα* in *ἔτλην*: *ὄνομα* is most likely for *ὄ-γνομα.* Before a single liquid we have the parasitic *ε* in *ἐ-λαχύς*, *ἐ-ρετμός*, *ἐ-ρεύγω* (Lat. *ructo* from *√rug*), *ἐ-ρυθρός*, *ἐ-λαύνω* for *ἐ-λα-νυω*[3]; *a* in *ἀ-λειφω*, *ἀ-μειβω*, *ἀ-μέλγω*, &c.; *ὀ* in *ὀ-λίγ-ος*, *ὀ-ρυγ-μός*, and perhaps *Ὄ-λυμπ-ος* from *√λαμπ*, by the Aeolic variation of *a* and *υ.* There are plenty of other examples, more or less uncertain, of the vowel in this connection. The *ε* is probably prefixed before *υ* in *εἴργω* for *ἐ-Ϝέργ-ω* (Sk. *√vṛij*), *ἐ-Ϝέρσ-η* (Sk. *√vṛish*), *ἐείκοσιν* for *ἐ-Ϝικοσι* (*ui-ginti*)[4]. I have already accounted for the occurrence of this vowel as being one of the many ways in which the Greeks struggled to avoid an initial *v.* Before a simple explosive sound the best examples are perhaps *ἀ-κούω*, *ὀ-κέλλω* by *κέλλω*[5], *ὀ-δάξ*, and most likely *ὀδούς*; it is not probable that if the vowel had been original (so that the word should be derived from ED, "to eat"), it would have been lost in all the derived languages; Sanskrit *danta,* Latin *den-ts,* Lithuanian *dant-i-s,* and German *Zahn.* The cases are very few in all, but they are peculiar extensions of the common usage which I cannot explain. It will be seen that the vowels

Very rare before an explosive sound.

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[1] See *Gr. Et.* 673, &c.

[2] Aesch. *S. c. T.* 18.

[3] *Gr. Et.* 677.

[4] *Comp.* p. 78.

[5] Blomfield (on Aesch. *Prom.* 191) lays down that where the two forms occur side by side, as *κέλλω* and *ὀκέλλω*, the first seems to be preferred by poets, the second by prose writers. If this be so, it points to the insertion of the vowel being felt to be a license, on the assumption that Greek and Latin poets always followed the stricter rule.

regularly found in this use are *a*, *ε*, *o*, the strongest vowels. The reason is probably this: at first the prefixed vowel would be the same as the radical vowel[1], though in actual use there are plenty of exceptions to this rule; and the vowel A in its triple form occurs, as I have already remarked, much oftener in roots than I or U.

(ii) *Medial vowels.*

I pass to the insertion of a vowel between consonants in the middle of a word. These cases are more doubtful, because sometimes the fuller form may be the older, and the vowel have been lost out of it. Thus Schleicher[2] regards the *ε* in *ὀρέγω* as inserted, and by comparison with Sanskrit *√arj*, arrives at an Indo-European ARG. But the Latin form is *reg-o*, and we have *rak-jan*, "to reach," in Gothic. It is therefore at least as probable—I think more so—that the older form was RAG; and that *o*, not *ε*, was the auxiliary vowel; and therefore *ὀρόγυια* the older form of *ὀργυιά*. Other examples, which seem more certain, are given by Schleicher and Curtius[3]: e.g. *ἀλ-ε-γεινός* mentioned above; *ἤλ-υ-θον* from the simple root *ελ*, whence the secondary root is *ελθ*; *μαλ-α-κός* by *μαλκός* (Hesychius)—the *θ* in *μαλθακός* is again the result of dynamic strengthening of the root—*δολ-ι-χός* from original *dargha*, Sanskrit *dîrgha; ἀλ-έ-ξω* beside *ἀλκ-ή*, the Latin *arc-eo : πινυτός* is from *√πνυ*. Apparently we have a suffixed *ε* forming for many verbs a secondary base in common use. Thus *√μελ* forms its present stem by the affix *yo*, as *μέλλω :* but this stem is phonetically increased by *ε*, whence comes the future *μελλ-ή-σω*, and the aorist *ἐμέλλ-η-σα*. Similarly *√μαχ*, " to fight," has a secondary form *μαχε*, which is actually used for the present in Ionic, and forms the aorist *ἐ-μαχε-σάμην*. These new forms, which are rather common[4], have nothing to do with the formation of stems, for the new vowel commonly runs through them all: and as it is generally rather late, and

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[1] W. Christ, *Lautlehre*, 19, quoted by Curtius.

[2] *Comp.* p. 76.

[3] *Gr. Et.* 679, &c.

[4] Curtius gives thirty-eight examples in his excellent School Grammar, which is translated and published in Dr Smith's series, see p. 198.

The "connecting vowel."

produces no change of meaning in the verb, the vowel is probably a mere phonetic insertion, closely akin to the "connecting vowel" (the German *Binde-vocal*), which is so important in the conjugation of verbs. The object of that vowel is to preserve the final consonant of a root from all possible injury when it is connected with suffixes beginning with consonants; e.g. in forming the second person of √*βολ* or *βουλ*, the Greeks insert *ε* before *σαι*, as *βουλ-ε-σαι*, *βουλ-ε-αι*, *βούλει*, so that in all these changes the λ has not suffered; on the contrary, the Latins, who in a few verbs (as √*es*, √*ed*, √*vel*, √*fer*) do not regularly employ a connecting vowel, lost the final consonant in *uol-s*, *uil-s*, *uis*. I cannot agree with Schleicher, who (following Bopp) regards this vowel as a demonstrative root[1], whose original form was *a* (preserved in Sanskrit and weakened in other languages, in Greek to *ε* and *ο*, in Latin to *i* and *u*, according to the following sound.) I can see no proof of such a view: and prefer to regard the vowel as simply phonetic, and belonging in its origin to the class which we are here considering; at a later time of course it became one of the arbitrary forms of grammar. It is worth observing that the oldest verbs (so far as we can trace the historical development of the verb) in Sanskrit, in Greek, and in Latin, do not generally possess these connecting vowels ; and it is just as likely that they never had them, as that they had them and lost them. Bopp's objection however is no doubt forcible, that *a* the strongest of the three primary vowels is least of all adapted for a mere phonetic link[2]; and is not quite met by the reply that *a* does not occur in Greek[3] and Latin, and that the Sanskrit *a* is not the full vowel of the primitive language. Still, the evidence seems to me to preponderate for the view that I have given[4].

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[1] *Comp*. p. 343.

[2] *Comp. Grammar*, vol. II. p. 694, English translation.

[3] Except perhaps a few verbs, such as *ἄγ-α-μαι*, *πρί-α-μαι*, &c.

[4] See, on the whole question, Curtius *Erlaüt*. pp. 107—110 (Engl. trans.).

latter the radical *μ* has been expelled by the consonant which it joined to produce: and *μέμ-β-λωκα* stands for *μέ-μλω-κα* from √*μολ*: *ἤμ-β-ροτον* stands beside *ἁμαρτάνω*. There are a few others of the same kind.

In Latin the only examples which are given by Schleicher[1] are the words in which *p* is inserted between *m* and *s*, or *m* and *t*: as *hiem-p-s*, *sum-p-tum*, &c. The greater ease of sound in the words so modified is obvious. Mr. Ferrar[2] holds the *s* in words like *monstrum* to be a similar insertion: I think it much better to suppose (with Corssen) a form *mon-es-trum*, like *fen-es-tra*, &c. So also in *abstineo*, *sustineo*, *ostendo*, &c. I believe that the *s* belongs to the preposition[3].

Conclusion.

I have thus endeavoured to set forth the main points in which the languages spoken by the Greeks and the Italians varied from the speech of their common forefathers—both from that of the Graeco-Italian race, out of which they immediately sprang, and from that of the race to which we, as well as all the civilized nations of Europe, trace our descent. I have endeavoured incidentally to point out any light which these divergencies cast on the character of the different peoples. But my main object has been to point out the common reason of all these changes in language; to shew that they all sprang from the same desire for ease of articulation; whether that tendency produced a weak or an indistinct sound instead of a stronger or a clearer one, the principle was the same: and the only cause which can be taken into account as stemming the progress of this change, or (very much more rarely) causing change in the opposite direction, was the instinctive desire to keep distinct and unconfused the terms which expressed distinct conceptions. I have in no case endeavoured to give all the examples which might have been given in support of the views advanced: those who care for the matter will prefer, and will find it far more useful, to seek out others for themselves. I have been obliged in the nature of the case to bring forward many facts familiar to all who are acquainted with even ordinary Greek and Latin grammars. But my aim has been to present facts, old in the main, under a new light. Only so far as I have succeeded in giving the reason for what often appear mere arbitrary anomalies; only so far as I have been able to trace many apparently isolated results to the operation of one common principle; just so far have I attained the object which I had in delivering the course of Lectures, which I now present in a rather fuller and more methodical form.

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[1] *Comp.* p. 266. [2] *Comp. Gram.* p. 175.

[3] For the form *abs* and its use, see Corssen, I. 154.

NOTE TO CHAPTER III.

THE GREEK AND LATIN VARIATIONS OF THE CASE-SUFFIXES.

I here give (as promised at page 53) two tables shewing the case-suffixes, attached (1) to the stems which end in a consonant, (2) to those which end in a vowel. Stems, however, which end in *i*, *u*, or a diphthong, must be assigned to the 1st or consonantal declension; these sounds have a semi-consonantal character. Thus, for example, whilst the genuine vowel-stems—those which end in *a* or its modification *o*—take *m* or *n* to make the neuter nominative, those which end in *i* and *u* either never did take the consonant, or have lost it, agreeing with the consonantal-stems, here as in other particulars. Some few Greek stems ending in ο, as πειθο-, or ω, as ἡρω-, must be added to the consonantal stems: these have lost a final consonant. See Curtius, *Erlaüt.* 56—60, Engl. trans.

The following tables are compiled, except in the matter of the dialects, from Schleicher; I have also borrowed slightly from Curtius, Bücheler, and Ferrar's *Comparative Grammar*. I have not entered into the question of the original meaning of these forms, and need hardly refer to Bopp's *Grammar*, which has long been accessible in English. The objections of Curtius (*Erlaüt.* pp. 184—199, Engl. trans.) to the "local" theory, at least in its widest extent, deserve the most careful consideration.

I. CONSONANTAL DECLENSION.

Sing.	Indo-Eur.	Greek.			Latin.		
Nom.	s	ὀπ-s	—	πόλι-s, dentals lost, ἔρι-(δ)-s, πᾶ(ντ)-s: but φρήν (φρεν-s), &c.	uoc-s,	—	abie(t)-s, mor(ti)-s; but uigil(-is).
Acc.	am	ὀπ-α(μ)	—	πόλι-ν and (some dentals) ἔριδ-α(ν) or ἔρι(δ-α)ν; in Aeolic δυσμένην (=δυσμεσες+αν), also πάϊν.	uoc-em.		
Abl.	at	………		σωφρόν-ως, σαφ(ές)-ως, ταχέ(Ϝ)-ως (ευ from radical υ by vowel-intensification): in all these the vowel is long, probably on the analogy of the vowel-declension: perhaps πόλε(y)-ως, ἄστε(Ϝ)-ως.	uoc-ed,		or uoc-id.
Gen.	as	ὀπ-ος	—	πόλι-ος (Ion.), πόλη-ος (e.g. *Il.* 16. 549) equivalent to πόλεy-ος (intens.): so also βασιλῆ-ος = βασιλευ-ος, in Homer and Aeol.; θέρε(σ)-υς (e.g. *Od.* 7. 118 and Aeol.).	uoc-is	—	senatūs (=senatu-os, *Ep. de Bacc.*).
Loc.	i	ὀπ-ι	—	used as dative: πόλε(y)-ι and πόληι: σαφέ(σ)-ι: often apparently heteroclite in Homer: e.g. παρακοίτι (*Od.* 3. 381), ἀλκί (*Od.* 6. 130). The locative sense retained in names of places: e.g. Σαλαμῖν-ι.	………		rur-i, arbor-i (Livy, 1. 26). Anxur-i: the long vowel following the other declension, the forms in which are commoner.

Dat.	ai	....		uoc-i	— reger-e (shortened and weakened to *e*).
Instr. I.	ā	....	*παντ-ᾶ* (Dor.) = *παντῇ, τάχα, δίχα* (Dor. *διχᾶ*), perhaps *ἵνα* (i.e. *yι-ν-ᾱ*, Schl. 579).	....	
Instr. II.	bhi	....	*ὄχεσ-φι, ἶ-φι.*	....	
Dual.			(hardly found in Doric or Aeolic)	(wanting)	
N. Acc.	(s)ās	*ὄπ-ε*	— *πύλε(y)-ε.*	....	
G. L.	aus	....	....	....	
D. Abl. Instr.	bhyāms	*ὀπ-ο-ῖν*	— *πολέy-ο-ιν*: these forms are very irregular: a connecting vowel *ο* has been inserted, on the analogy of the other declension: and *bh* has been dropped. In *ποδ-ο-ῖ-ιν* the *ι* seems to represent the original *y*.	....	
Plur.					
Nom.	s(as)	*ὄπ-ες*	— *πόλε(y)-ες.*	uoce-s.	
Acc.	ams	*ὄπ-ας*	— *πόλε(y)-ας.*	uoce-s.	
Gen.	(s)ām(s)	*ὄπ-ων*	— *πόλε(y)-ων.*	uoc-um,	aui-um
Loc. I.	sva(s)	*ὄπ-σι*	— used as dative: *πόλι-σι* (Ion.), *βασιλεῦ-σι*: *πόλε(y)-σι* (intens.): *πόλε-σσι* (*Il.* 17. 236): with connecting vowel (probably) *ἐπέ-(σ)-ε-σσι* (Hom. for *ἐπεσ-ε-σϝι*): *ἐλθόντ-ε-σσι* (Aeol.): *μακάρ-ε-σσι* (Theok. 1. 126): then by analogy also *πολε(y)-ε-σσι* (*Il.* 12. 399) or *πολί-ε-σσι* (*Od.* 21. 252).	....	
D. Abl.	bhyams	....		uoc-i-bus,	aui-bus, no-b(e)is.
Instr.	bhis	....	*ναῦ-φιν, ὄχεσ-φιν*, also used as a singular (*Od.* 4. 533), *κοτυληδον-ό-φιν* (*Od.* 5. 433).	....	
? Loc. II.	tas	....	*ἐν-τός, ἐκ-τός* [cf. Sk. *a-tas*, &c.].	... .	in-tus, sub-tus.

II. VOWEL-DECLENSION.

Sing.	INDO-EUR.	GREEK.			LATIN.		
Nom.	s	νεανία-ς;	οἶκο-ς:	Hom. ἱππότα: ἴυκτα (Theok. 8. 30).	scriba(s);	uico-s.	
Acc.	m	νεανία-ν;	οἶκο-ν.		scriba-m;	uico-m.	
Abl.	at	.........;	....	πῶς, ὥς, &c., οὕτως and οὕτω, perhaps τηνῶ (Theok. 3. 25).	scribā(d);	uicō(d).	
Gen.	sya	νεανίᾱ-(ο) -ου ;	οἴκο-ιο -ου :	Ἀτρείδαο (Hom.), νεανίεω (Ion.), Ἑρμείω (Hom.), πολίτα-υ (Arcad.): οἴκω = οἴκο-ο (Dor. sev.), τεῦ (West Asia).	scriba-i -ae ;	uic(o)-ī;	familiā-s (ā-stem).
Loc.	i	.........;	οἴκο-ι:	χαμα-ί; ποῖ; ἀμαχε-ί, &c.; πεῖ (Theok. 2. 1); τουτε-ῖ (Theok. 5. 45); τυ-ῖ-δε (Theok. 28. 3); ἀμισθ(ο)-ί. Some of these pass into the sense "towards"; compare our *where* = *whither*.	.........;	....	Romā-i (ā-stem), domī (i.e. domo-i), Corinthi, &c.: here-i (*Mil. Glor.* 59).
Dat.	ai	νεανίᾳ;	οἴκῳ.		(scribāi) -ae ;	uicō(i);	quoi (inscr.).
Instr. I.	ā	.........;	....	ἅμα (ἁμᾶ, *Od.* 6. 105): perhaps adverbs in ω, e.g. προτέρω (*Od.* 4. 36).	.........;	....	
Instr. II.	bhi	.........;	....	πασσαλό-φι (*Od.* 8. 67), &c.	.........;	....	
Loc. II.	dhi	.........;	οἴκο-θι:	so οὐρανό-θι πρό (*Il.* 3. 3), Ἰλιό-θι προ (*Il.* 3. 561).			
Abl. II.	dhas	.........;	οἴκο-θεν:	σέ-θεν and ἠῶ-θεν (Hom. and Aeol.), πρόσ-θα (Aeol.), τουτό-θε (Theok. 4. 10): [ἔνθεν = Sk. *adhas*].			
		[*Forms apparently peculiar to Greek, and of doubtful origin.*					
		.........;	οἴκα-δε,	and οἰκόνδε (Ion. not Dor.; ? Aeol.):			
		.........;	....	ἔρα-ζε, Ἀθήνα-ζε: perhaps both this and the preceding suffix arise from an original γε, of pronominal origin.			
		.........;	οἴκο-σε:	ἄλλο-σε (*Od.* 23. 184, and Att.), ὁμό-σε (*id.*).]			

Dual.							
N. Acc.	(s)ās	*νεανίᾱ*;	*οἴκω.*		.........;	....	
G. Loc.	......	.........;	....		.........;	....	
D. Abl. Instr.	bhyāms	*νεανία-ιν*;	*οἴκο-ιν*:	*ὀφθαλμο-ῖ-ιν* (*Od.* 4. 115), &c.	.........;	....	
Plur.							
Nom.	(s)as	*νεανία-ι*;	*οἶκο-ι.*		scriba-i -ae ;	uic(o)-ī.	
Acc.	ams	*νεανία-(ν)-ς*;	*οἴκο-νς* *-ους*	*οἴκως* (Dor. sev.); the Cretan keeps the termination *-νς*.	scribā-(m)s;	uicō-(m)s.	
Gen.	sām(s)	*νεανι(d)-ων*;	*οἴκ(ο)-ων*:	*κλισάων* (*Il.* 2. 91); *νεανιᾶν* (Dor. and Aeol.); *πασέων* (*Il.* 18. 431).	scriba-rum;	uico-rum.	
Loc.	sva(s)	*νεανία-ι-σ(ι)*;	*οἴκο-ι-σ(ι)*:	locative and also dative; the final *ι* is kept in Aeol. and Ion., sometimes even in Attic: the insertion of the other *ι* is inexplicable, except as an irregular compensation for the loss of the *ν*: it is generally found after *ᾱ*-stems, as *χωρᾱ-ι-ς*, *Θήβῃ-ς* (*Od.* 4. 126), but sometimes not, as *θυρᾶ-σι*, *Ἀθήνη-σι.*	scrib(a)-i-s;	uic(o)is;	used as datives and ablatives: Athen-i-s, foris, &c. keep the locative sense.
D. Abl.	bhyams	.........;	....		.........;	.........;	deā-bus, &c., from ā-stems.
Instr.	bhis	.........;	....	*ἱππό-φιν.*	.........;	....	
			[*Forms*	*of doubtful origin.*			
? Loc.			*οἴκα-δις*	(Ar. *Ach.* 742), *χαμά-δις* (*Od.* 4. 114), *ἄλλυδις* (*Il.* 11. 486).	.........;	....	
? Loc. II.	dhis		.........:	*αὖ-θις.*]	.........;	....	

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